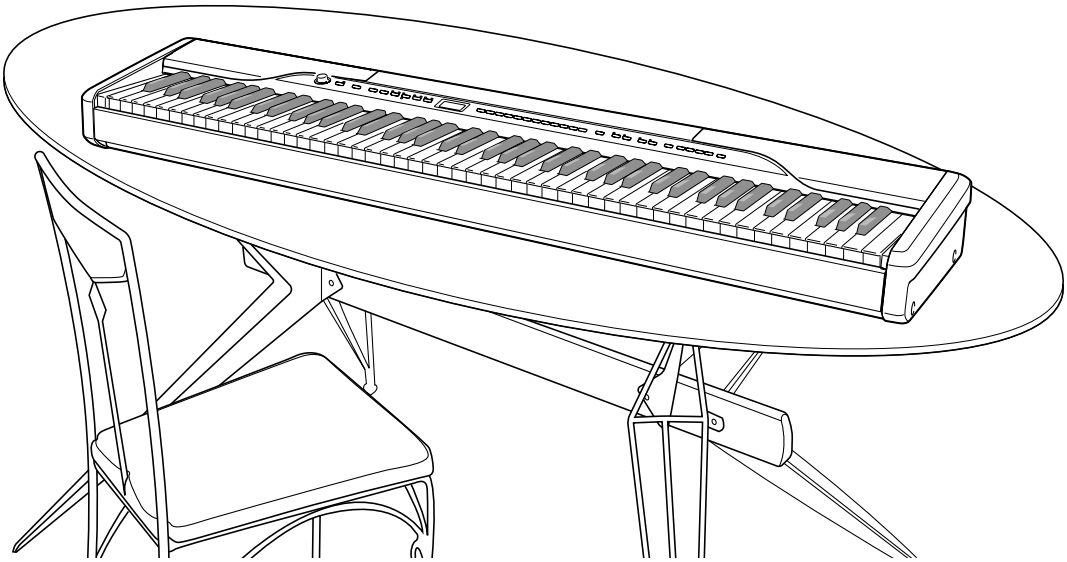
ES

Privia

PX-310

USER'S GUIDE
GUÍA DEL USUARIO

Please keep all information for future reference.
Guarde toda información para tener como referencia futura.



Safety Precautions
Before trying to use the piano, be sure to read the separate "Safety Precautions".

Precauciones de seguridad
Antes de intentar usar el piano, asegúrese de leer las "Precauciones de seguridad" separadas.

PX310ES1C

CASIO

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

The power indicator being unlit does not mean the apparatus is completely disconnected from the MAINS.
When you need to have the apparatus completely disconnected from the MAINS, you must unplug the power cord. For that purpose, locate the apparatus in a way that secures easy access to the power cord.

NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Important!

Please note the following important information before using this product.

- Before using the AD-12 Adaptor to power the unit, be sure to check the AC Adaptor for any damage first. Carefully check the power cord for breakage, cuts, exposed wire and other serious damage. Never let children use an AC adaptor that is seriously damaged.
- The product is not intended for children under 3 years.
- Use only CASIO AD-12 adaptor.
- The AC adaptor is not a toy.
- Be sure to disconnect the AC adaptor before cleaning the product.

This mark applies in EU countries only.

CE CASIO Europe GmbH
Bornbarch 10, 22848 Norderstedt, Germany

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MIDI Implementation Chart

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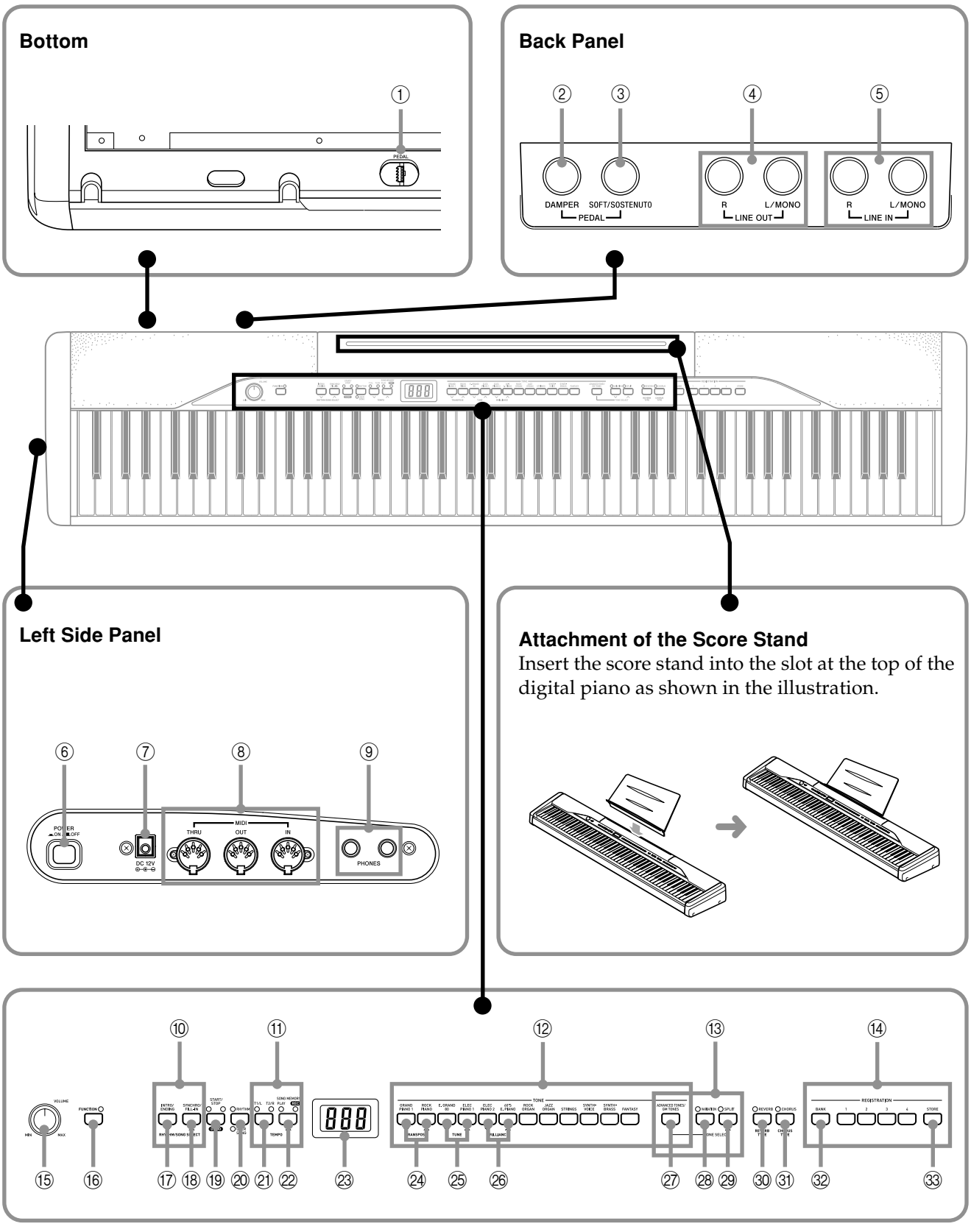
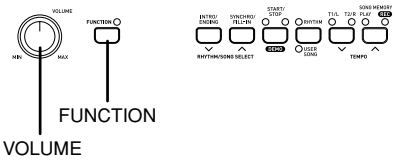
General Guide



NOTE

- Each chapter of this manual starts with an illustration of the piano's console, which shows the buttons and other controllers you need to operate.



① PEDAL connector
② DAMPER PEDAL jack
③ SOFT/SOSTENUTO PEDAL jack
④ LINE OUT R, L/MONO jacks
⑤ LINE IN R, L/MONO jacks
⑥ POWER button
⑦ DC 12V jack
⑧ MIDI THRU/OUT/IN terminals
⑨ PHONES jacks
⑩ RHYTHM/SONG SELECT buttons
⑪ TEMPO buttons
⑫ TONE buttons
⑬ TONE SELECT buttons
⑭ REGISTRATION buttons
⑮ VOLUME knob
⑯ FUNCTION button
⑰ INTRO/ENDING button
⑱ SYNCHRO/FILL-IN button
⑲ START/STOP, DEMO button
⑳ RHYTHM, USER SONG button
㉑ T1/L T2/R button
㉒ SONG MEMORY button
㉓ Display screen
㉔ TRANSPOSE buttons
㉕ TUNE buttons
㉖ BRILLIANCE buttons
㉗ ADVANCED TONES/GM TONES button
㉘ VARIATION button
㉙ SPLIT button
㉚ REVERB, REVERB TYPE button
㉛ CHORUS, CHORUS TYPE button
㉜ BANK button
㉝ STORE button

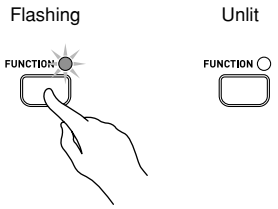
NOTE

- Key, button, and other names are indicated in the text of this manual using bold type.

About the FUNCTION button

The FUNCTION button makes it possible to perform a variety of useful functions. Note the following general information about using the FUNCTION button.

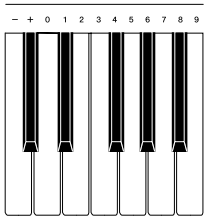
- An indicator lamp above the FUNCTION button flashes while it is depressed. The lamp goes out when you release the FUNCTION button.



- The FUNCTION button is always used in combination with another button or keyboard key. You hold down the FUNCTION button as you press another button or keyboard key.
  - The indicator lamp above the button flashes for a few seconds at high speed to let you know that the setting is complete.
  Example: "Adjusting the Brilliance of a Tone" on page E-8
- For details about all the keyboard key functions you can perform with the FUNCTION button, see "Setting Control Key Chart" on page E-31.

Numeric Input Keys and +/– Keys

- For a moment after you hold down the FUNCTION button and then press another button to activate a function, you can use certain keyboard keys to input numbers or to increase (+) and decrease (–) setting values.
- Since the keyboard keys operate as switches at this time, notes do not sound when you press keyboard keys.



See "To adjust the tempo" on page E-12 for an actual example.

Playing Back All the demo Tunes

The following procedure plays back the demo tunes in sequence.

1. While holding down the **FUNCTION** button, press the **DEMO** button at the same time.
   - This starts sequential playback of the demo tunes.
   - You can play along with the demo tunes on the keyboard, if you want. Tone assigned to the keyboard is the one that is preset for the demo tune that is playing.
2. Press the **DEMO** button again to stop demo tune play.

Power Supply

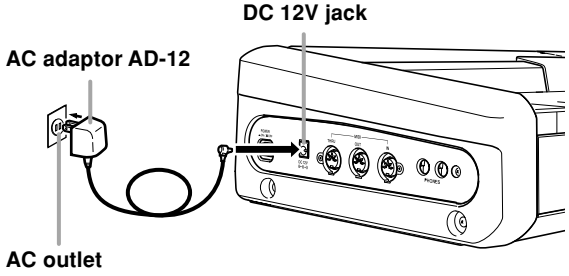
You can power this digital piano by plugging it into a standard household power outlet.
Be sure you turn off power and unplug the power cord from the electrical outlet whenever the digital piano is not in use.

Using the AC Adaptor

Make sure that you use only the AC adaptor specified for this digital piano.

Specified AC Adaptor: AD-12

[Left Side Panel]



Note the following important precautions to avoid damage to the power cord.

- **During Use**
  - Never pull on the cord with excessive force.
  - Never repeatedly pull on the cord.
  - Never twist the cord at the base of the plug or connector.
  - The power cord should not be stretched tight while it is in use.
- **During Movement**
  - Before moving the keyboard, be sure to unplug the AC adaptor from the power outlet.
- **During Storage**
  - Loop and bundle the power cord, but never wind it around the AC adaptor.

IMPORTANT!

- Make sure that the product is turned off before connecting or disconnecting the AC adaptor.
- Using the AC adaptor for a long time can cause it to become warm to touch. This is normal and does not indicate malfunction.

407A-E-006A

Connections

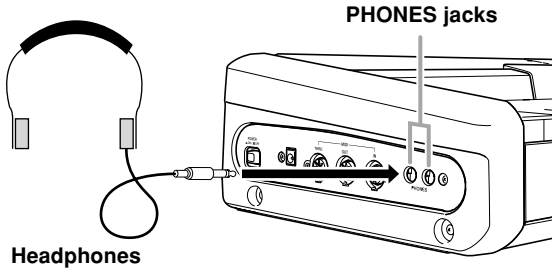
IMPORTANT!

- Whenever connecting external equipment, first set the VOLUME knob of the digital piano and the volume controller of the external equipment to relatively low volume settings. You can later adjust volume to the level you want after connections are complete.
- Be sure also to refer to the documentation that comes with the external equipment for its proper connection procedures.

Connecting Headphones

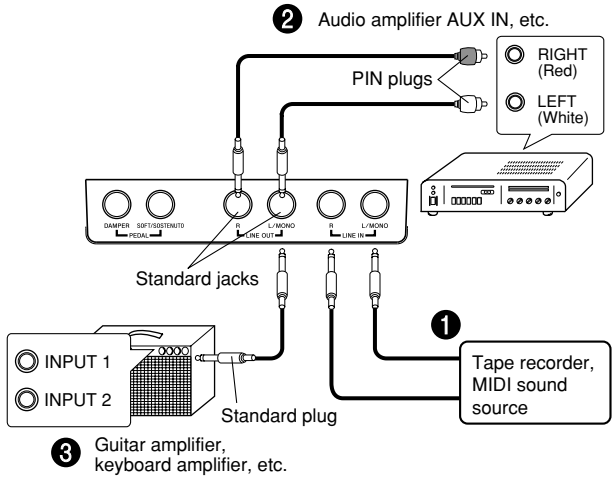
Connect commercially available headphones to the digital piano's PHONES jacks. This cuts off the built-in speakers, which means you can practice even late at night without disturbing others. To protect your hearing, make sure that you do not set the volume level too high when using headphones.

[Left Side Panel]



Connecting an audio or musical instrument amplifier

Connecting to an audio or musical instrument amplifier provides even clearer, more powerful sound through external speakers.



Playing Output from External Equipment through the Piano's Speakers ❶

LINE IN R jack input sounds through the piano's right speaker, while **LINE IN L/MONO** jack input sounds through the left speaker. Connecting to the **LINE IN L/MONO** jack only causes the same output to be produced from both speakers. It is up to you to purchase connecting cables that are compatible with the equipment you are connecting.

Connecting to Audio Equipment ❷

Use commercially available cables to connect the external audio equipment to the piano's **LINE OUT** jacks as shown in Figure ❷. **LINE OUT R** jack output is right channel sound, while **LINE OUT L/MONO** jack output is left channel sound. It is up to you to purchase connecting cables like the ones shown in the illustration for connection of audio equipment. Normally in this configuration you must set the audio equipment's input selector to the setting that specifies the terminal (such as AUX IN) to which the piano is connected. Use the piano's **VOLUME** knob to adjust the volume level.

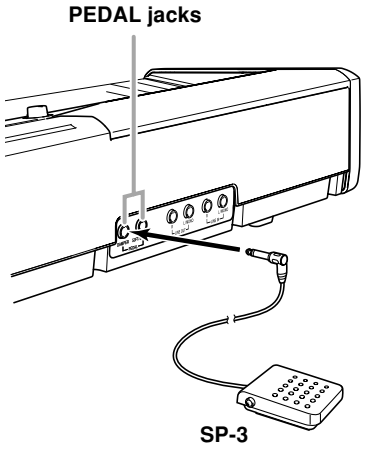
Connecting to a Musical Instrument Amplifier ❸

Use commercially available cables to connect the amplifier to the piano's **LINE OUT** jacks as shown in Figure ❸. **LINE OUT R** jack output is right channel sound, while **LINE OUT L/MONO** jack output is left channel sound. Connecting to the **LINE OUT L/MONO** jack only outputs a mixture of both channels. It is up to you to purchase connecting cable like the one shown in the illustration for connection of the amplifier. Use the piano's **VOLUME** knob to adjust the volume level.

Connecting to a PEDAL Jack

Depending on the type of operation you want the pedal (SP-3) to perform, connect the pedal's cable to the digital piano's PEDAL DAMPER jack or PEDAL SOFT/SOSTENUTO jack. If you want to use both jacks at the same time, you need to purchase another optionally available pedal.
See "Using the Piano's Pedals" on page E-11 for information about using a pedal.

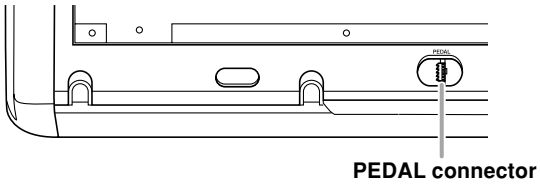
[Back Panel]



PEDAL connector

You can connect the optionally available Pedal Unit (SP-30) to the PEDAL connector. You can then use the pedals for expression that is similar to that available on an acoustic piano.

[Bottom]



Accessories and Options

Use only the accessories and options specified for this digital piano. Use of non-authorized items creates the danger of fire, electric shock, and personal injury.

Playing with Different Tones

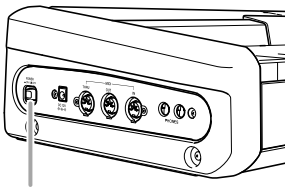
Selecting and Playing a Tone

Your piano has the following types of tones built in.

Main Tones	12
Variation Tones	12
Advanced Tones	40
GM Tones	128
Drum Sets	10

Selecting Main Tones and Variation Tones

1 Press the **POWER** button.



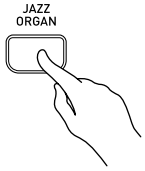
POWER button

2 Use the **VOLUME** knob to adjust the volume level.

3 Press one of the 12 **TONE** buttons to select the tone you want.

- The names of the main tones are marked above the TONE buttons.

Example: To select JAZZ ORGAN



4 Press the **VARIATION** button so the indicator lamp above it is lit.

- This selects the variation tone assigned to each TONE button.

Example: CLAVI

- For information about variation tone assigned to each button, see the Tone List on page A-1.

5 To toggle between the main tone (VARIATION indicator lamp off) and variation tone (VARIATION indicator lamp on), press the **VARIATION** button or the **TONE** button.

NOTE

- Changing the main tone, variation tone or advanced tone selection causes DSP* to switch automatically to the default setting for the newly selected tone. This causes any notes that are sounding at the time of the change to be interrupted momentarily. The DSP* will be set to the default setting for the newly selected tone when the note resumes. (*See page E-10)

Selecting an Advanced Tone, GM Tone, or Drum Set

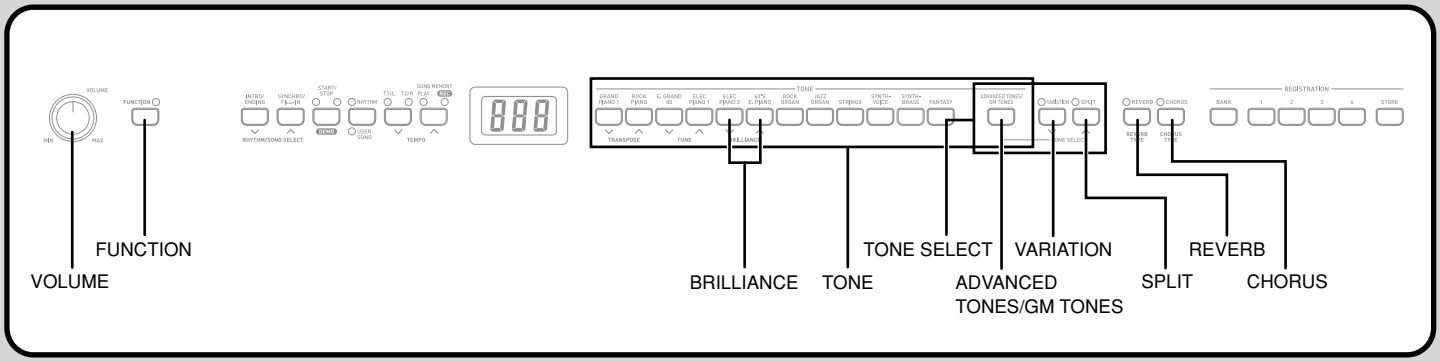
You can use the following procedure to assign one of the piano's 40 Advanced Tones, 128 GM tones, or 10 drum sets to the ADVANCED TONES/GM TONES button.

1 Press the **ADVANCED TONES/GM TONES** button.

- This selects the tone that is currently assigned to the ADVANCED TONES/GM TONES button.
- The display continues to display the tune or rhythm number.

2 Use the Tone List on page A-1 to find the advanced tone, GM tone, or drum set number you want.

Example: 008 (MARIMBA)



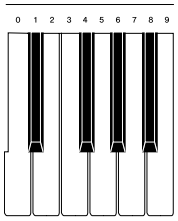
3 While holding down the **FUNCTION** button, press the **ADVANCED TONES/GM TONES** button. Remember to keep the **FUNCTION** button depressed.

- This causes the tone number of the tone that is currently assigned to the ADVANCED TONES/GM TONES button to appear on the display.

Example: 080 (GM VIOLIN)

4 While holding down the **FUNCTION** button, use the keyboard keys shown below to input the tone number of the tone you want to assign to the **ADVANCED TONES/GM TONES** button.

Example: 008 (MARIMBA)

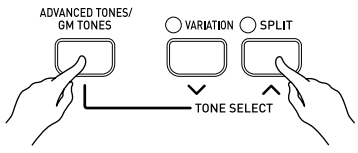


- This displays the number of the assigned tone.

5 After inputting the tone number you want, release the **FUNCTION** button to exit the GM tone setting screen.

NOTE

- You can also select a tone by holding down the ADVANCED TONES/GM TONES button as you use the TONE SELECT [∨] and [∧] buttons to scroll through tone numbers on the display.



- The tone that you assign to the ADVANCED TONES/GM TONES button is retained until you turn off the keyboard.
- If a drum set is assigned to the ADVANCED TONES/GM TONES button, keyboard keys sound drum sounds when you press them. See page A-3 for information about the drum sounds that are assigned to each of the keyboard keys.

Selecting the ADVANCED TONES/GM TONES Button Variation Tone

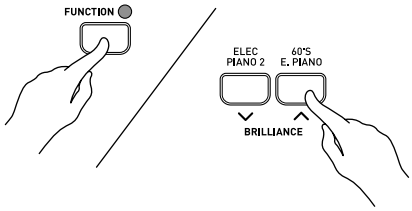
To assign a variation tone to the ADVANCED TONES/GM TONES button, perform the steps under "Selecting an Advanced tone, GM Tone, or Drum Set" on page E-7. After step 1, however, press the VARIATION button so the indicator lamp above it is lit.

- After you assign a tone as the variation tone, you can select it by pressing the ADVANCED TONES/GM TONES button.

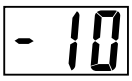
Adjusting the Brilliance of a Tone

You can adjust the clarity and sharpness of a tone to suit your music and personal preferences.

1 Holding down the **FUNCTION** button, press the **BRILLIANCE** buttons to adjust the brilliance of a tone to the level that you want.



[∨] : produces a more mellow sound
[∧] : produces a brighter sound



- To return the brilliance setting to its initial default, hold down the FUNCTION button and press both of the BRILLIANCE buttons at the same time.

Layering Two Tones

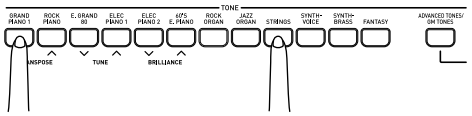
Use the following procedure to layer to two tones, so they sound at the same time.
Of the two TONE buttons you press to layer two tones, the one on the left is the main tone, while the one on the right is the layered tone.

PREPARATION

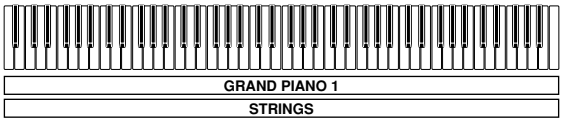
- If you plan to use a variation tone, perform the procedure on page E-7 to select the variation tone for the applicable TONE button(s) before starting this procedure.

1 Simultaneously press the **TONE** buttons of the two tones that you want to layer.

Example: Press GRAND PIANO 1 button and STRINGS button at the same time.



- If the layer tone is a variation tone, the indicator lamp above the VARIATION button will light.



- The tones are now layered.

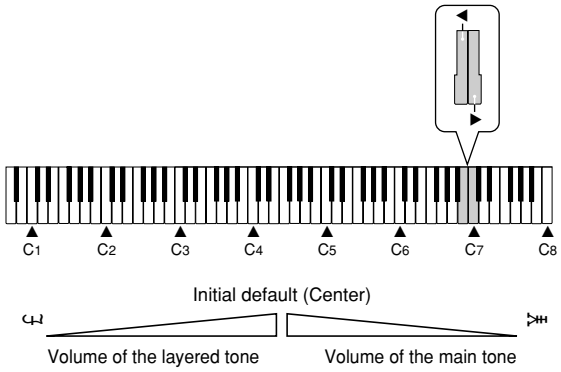
2 After you are finished using the layered tones, press the one of the **TONE** buttons again to unlayer them.

NOTE

- Note that you cannot layer the main tone and variation tone assigned to the same TONE button.

Adjusting the Volume Balance between Two Layered Tones

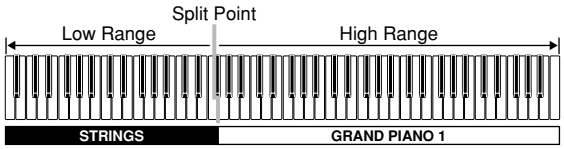
1 While holding down the **FUNCTION** button, use the keyboard keys shown below to adjust the volume of the layered tones.



- To return the volume setting to its initial default, hold down the FUNCTION button and press both of the keys at the same time.

Assigning Different Tones to the Left and Right Sides of the Keyboard

You can assign different tones to keys on the left side and the right side of the keyboard.



1 Press the **TONE** button of the tone you want to select for the high (right) range.

Example: GRAND PIANO 1

2 Press the **SPLIT** button.

- This causes the SPLIT indicator lamp to light.

3 Press the **TONE** button of the tone you want to select for the low (left) range.

- The keyboard is now split between the two tones.

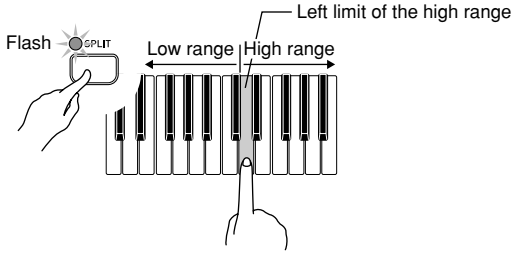
Example: STRINGS

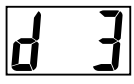
4 After you are finished using the split keyboard, press the **SPLIT** button again to unsplit it.

- This causes the SPLIT indicator lamp to go out.

Specifying the Keyboard Tone Split Point

1 While holding down the **SPLIT** button, press the keyboard key where you want the left limit of the high range (right) tone to be.





NOTE

- The split point setting also controls the point where the keyboard splits between the accompaniment keyboard (pages E-14, 15) and the melody keyboard. Moving the split point also affects the sizes of the accompaniment keyboard and the melody keyboard.

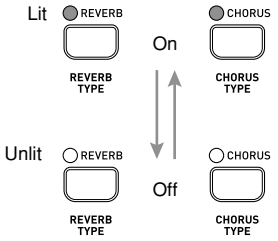
Using Tone Effects

Reverb: Makes your notes resonate
Chorus: Adds more breadth to your notes

Turning Effects On and Off

1 Each press of the **REVERB** or **CHORUS** button toggles the setting as shown below.

- You can determine the status of the effects by checking the REVERB and CHORUS indicator lamps.



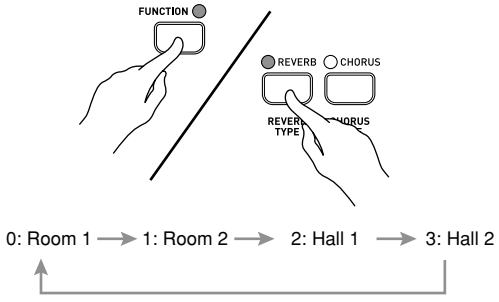
Changing the Effect Type

There are four reverb and four chorus types.

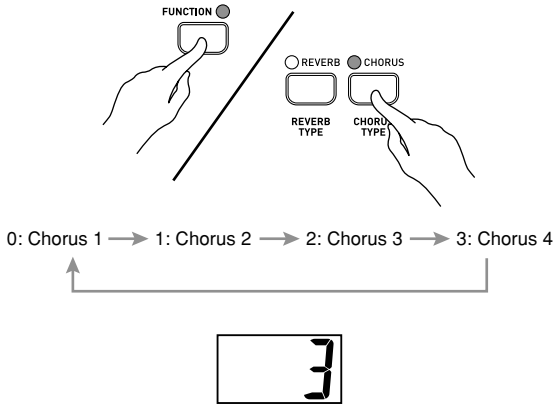
1 Turn on the effect you want to change.

2 While holding down the **FUNCTION** button, press the **REVERB** or **CHORUS** button to cycle through the effect type settings as shown below.

[Reverb]



[Chorus]

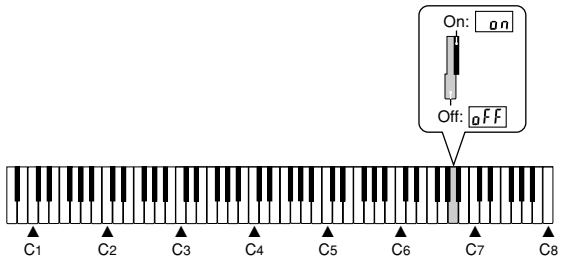


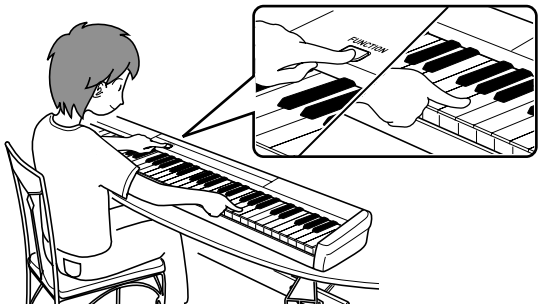
About DSP

DSP makes it possible to digitally produce complex acoustic effects.
The DSP is assigned to each tone whenever you turn on digital piano power.

Turning DSP On and Off

1 While holding down the **FUNCTION** button, press one of the keyboard keys shown below to turn DSP on or off.





NOTE

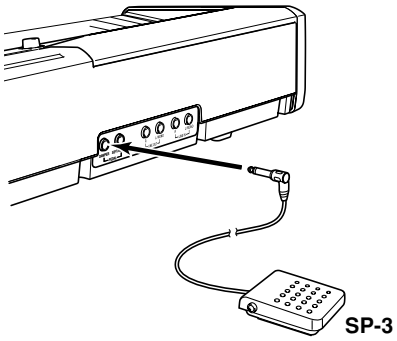
- Under initial default settings, DSP is on for the main tone, and layer and split are turned off. DSP can be applied to only one part as shown below.

	Main Tone	Layer Tone	Split Tone
Initial Defaults	On	Off	Off
Layer Tone DSP On	Off	On	Off
Split Tone DSP On	Off	Off	On

- You can turn chorus on or off for each main tone, layer tone, and split tone part.
- You cannot turn reverb on or off for each main tone, layer tone, and split tone part.

Using the Piano's Pedals

The digital piano is equipped with two pedal jacks, one for a damper pedal and one for a soft/sostenuto pedal.



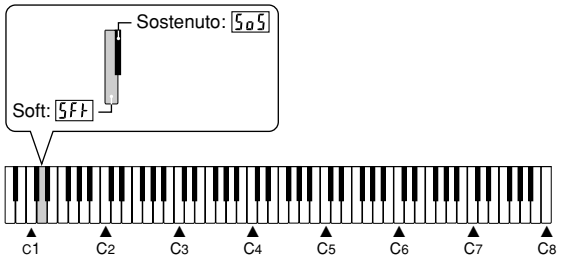
Pedal functions

- **Damper Pedal**
  Pressing the damper pedal while playing will cause the notes you play to reverberate for a very long time. When GRAND PIANO 1 is selected as the tone, using this pedal causes note to reverberate just like the pedal on an acoustic grand piano.
- **Soft Pedal**
  Pressing this pedal while playing weakens notes played on the keyboard after the pedal was pressed, and makes them sound softer.
- **Sostenuto Pedal**
  Only the notes of the keys that are depressed when this pedal is pressed are sustained until the pedal is released.

Selecting the Pedal Function

A pedal connected to the piano's PEDAL jack can operate as either a soft pedal or a sostenuto pedal. When you turn on the keyboard, the pedal is initially configured for soft pedal operation. You can perform the following operation to select either soft or sostenuto for the pedal operation.

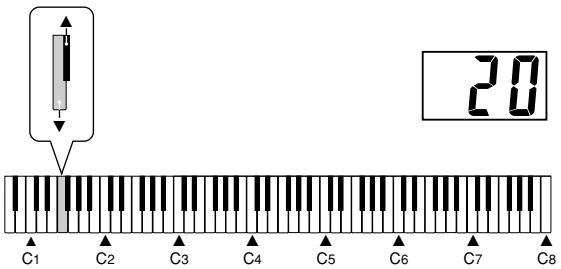
1. While holding down the **FUNCTION** button, use the keyboard keys shown below to select either soft or sostenuto.



Adjusting the Effect Applied when the Damper Pedal is Pressed Half Way (With optional SP-30 only)

You can specify to what extent the damper effect should be applied when you press the damper pedal half way. A setting in the range of 0 (no effect) to 42 (same effect as full press) can be specified.

1. While holding down the **FUNCTION** button, press one of the keyboard keys shown below to specify the setting you want.



▼: Decreases the effect
▲: Increases the effect

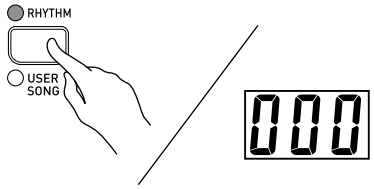
- To return the volume setting to its initial default, hold down the FUNCTION button and press both of the keys at the same time.

Playing Rhythms

You can select from among 120 built-in rhythms. Rhythms 0 through 109 include percussion instrument sounds, but rhythms 110 through 119 do not. See the next page for information about how to use rhythms 110 through 119.

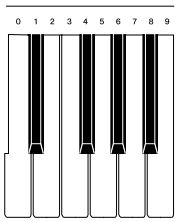
1 Press the **RHYTHM** button so the RHYTHM indicator lamp (above the button) is lit.

- Each press of the button toggles between the upper indicator lamp and lower indicator lamp.



2 While holding down the **FUNCTION** button, use the keyboard keys shown below to input a rhythm number.

- If you want your accompaniment rhythm to include percussion instrument sounds, select a rhythm in the range of 0 through 109.



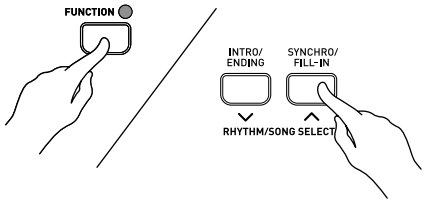
3 Press the **START/STOP** button.

- This starts the rhythm.

4 Press the **START/STOP** button again to stop the rhythm.

NOTE

- You can also cycle through the available rhythms in step 2 by holding down the FUNCTION button and pressing the RHYTHM/SONG SELECT [∨] or [∧] button.



- Pressing the two RHYTHM/SONG SELECT buttons at the same time selects rhythm 0.

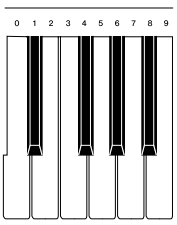
To adjust the tempo

1 While holding down the **FUNCTION** button, use the **TEMPO [∨]** and **[∧]** buttons to change the tempo (speed).

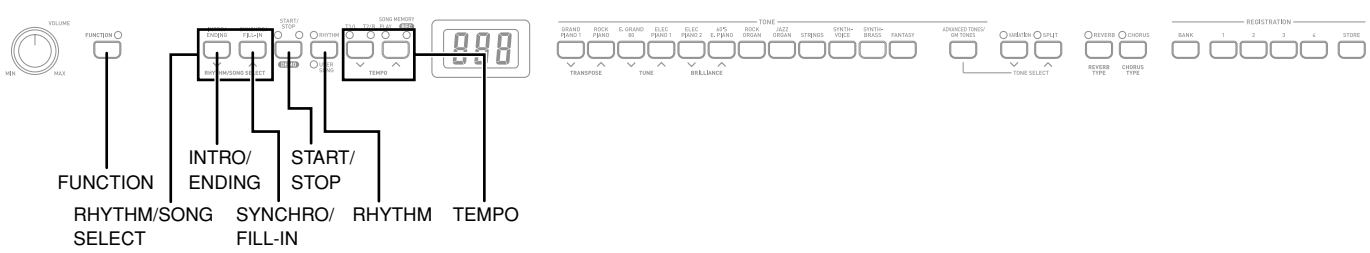
- To return to its standard tempo setting, press the TEMPO [∨] and [∧] buttons at the same time.

NOTE

- You can also use keyboard keys to change the tempo setting.
  (1) While holding down the FUNCTION button, press the TEMPO button.
  (2) While keeping the FUNCTION button depressed, use the keyboard keys shown below to input a number.

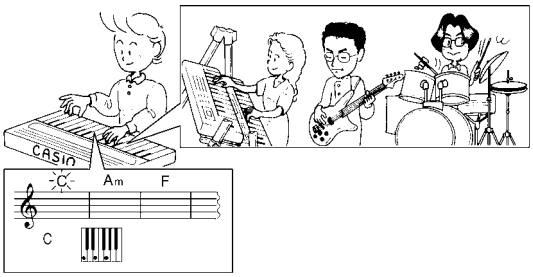


* Tempo Range: 30 to 255



Using Auto Accompaniment

With auto accompaniment, the keyboard automatically plays rhythm, bass, and chord parts in accordance with chords you select using simplified keyboard fingerings, or chords you play. Auto accompaniment makes it feel like you have your own private backup group with you all the time.



NOTE

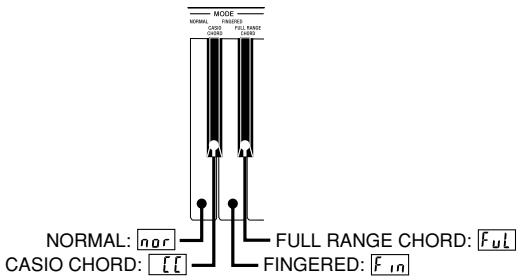
- Rhythms 110 through 119 consist of chord accompaniments only, without any drums or other percussion instruments. These rhythms do not sound unless CASIO CHORD, FINGERED, or FULL RANGE CHORD is selected as the accompaniment mode. With such rhythms, make sure that CASIO CHORD, FINGERED, or FULL RANGE CHORD is selected before you try playing chords.

To play with auto accompaniment

PREPARATION

- Select the rhythm you want to use and adjust the tempo.

1 Select one of the three chord modes (MODE).



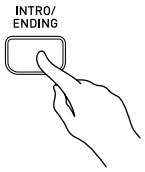
- Here we will select the CASIO CHORD mode.
- See page E-14 for information about how to use the chord modes.

2 Press the **SYNCHRO/FILL-IN** button.

- This configures the piano so rhythm and chord accompaniment will start automatically when you press any keys within the accompaniment keyboard range.

3 Press the **INTRO/ENDING** button.

- This configures the piano so accompaniment starts with an intro pattern.



4 Use a CASIO CHORD fingering to play the first chord within the accompaniment keyboard range.

- This will cause the intro pattern for the selected rhythm to play, followed by the auto accompaniment rhythm and chord pattern.

5 Use CASIO CHORD fingerings to play other chords.

- See "How to Play Chords" on page E-14 for information about how to finger chords with the various chord modes.
- You can insert a fill-in pattern while an auto accompaniment is playing by pressing the SYNCHRO/FILL-IN button. A fill-in helps to change the mood of the auto accompaniment pattern.

6 To stop auto accompaniment play, press the **INTRO/ENDING** button.

- This will play an ending pattern for the selected rhythm before stopping auto accompaniment play.

NOTE

- You can start or stop auto accompaniment play without an intro or ending pattern by pressing the START/STOP button in steps 3 and 6.
- You can adjust the volume of auto accompaniment. For more information see "Adjusting Accompaniment Volume" on page E-24.

How to Play Chords

The way you finger chords depends on the current chord mode.

■ Normal

In this mode there is no auto accompaniment, so you can play all of piano's keys for standard-fingering chords or melody notes.

■ CASIO CHORD

This method of chord play makes it possible for anyone to easily play chords, regardless of previous musical knowledge and experience. The following describes the CASIO CHORD "Accompaniment keyboard" and "Melody keyboard", and tells you how to play CASIO CHORDs.

CASIO CHORD Accompaniment Keyboard and Melody Keyboard

IMPORTANT!

- The accompaniment keyboard can be used for playing chords only. No sound will be produced if you try playing single melody notes on the accompaniment keyboard.
- The split point (page E-9) is the point that separates the Auto Accompaniment area and the melody area of the keyboard. You can change the location of the split point, which also changes the sizes of the keyboard areas.

Chord Types

CASIO CHORD accompaniment lets you play four types of chords with minimal fingering.

Chord Types	Example
Major chords Press one accompaniment key. Note that the chord produced when you press an accompaniment keyboard key does not change octave, regardless of which key you use to play it.	C Major (C)
Minor chords (m) To play a minor chord, keep the major chord key depressed and press any other accompaniment keyboard key located to the right of the major chord key.	C minor (Cm)
Seventh chords (7) To play a seventh chord, keep the major chord key depressed and press any other two accompaniment keyboard keys located to the right of the major chord key.	C seventh (C7)
Minor seventh chords (m7) To play a minor seventh chord, keep the major chord key depressed and press any other three accompaniment keyboard keys located to the right of the major chord key.	C minor seventh (Cm7)

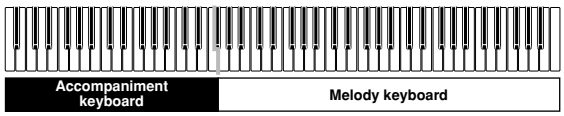
NOTE

- It makes no difference whether you press black or white keys to the right of a major chord key when playing minor and seventh chords.

■ FINGERED

In this mode, you specify chords by playing them as you would on a piano, inside the accompaniment keyboard range. To specify a C-chord, you would play C-E-G.

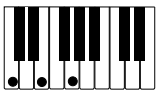
FINGERED Accompaniment Keyboard and Melody Keyboard



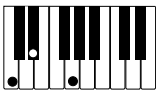
IMPORTANT!

- The accompaniment keyboard can be used for playing chords only. No sound will be produced if you try playing single melody notes on the accompaniment keyboard.
- The split point (page E-9) is the point that separates the Auto Accompaniment area and the melody area of the keyboard. You can change the location of the split point, which also changes the sizes of the keyboard areas.

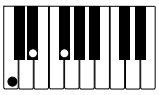
C



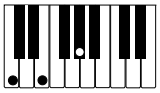
Cm



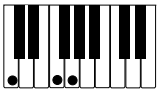
Cdim



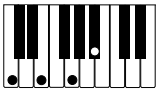
Caug *1



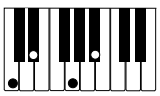
Csus4



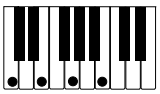
C7 *2



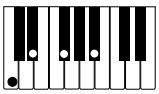
Cm7 *2



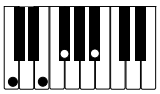
Cmaj7 *2



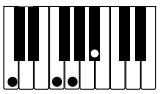
Cm7♭5



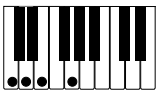
C7♭5 *1



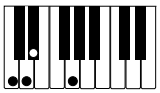
C7sus4



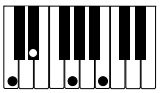
Cadd9



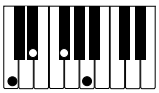
Cmadd9



CmM7 *2



Cdim7 *1



NOTE

- See the "Fingered Chord Chart" on page A-4 for details on playing chords with other roots.

*1: Inverted fingerings cannot be used. The lowest note is the root.

*2: The same chord can be played without pressing the 5th G.

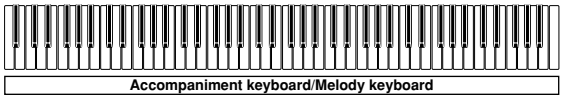
NOTE

- Except for the chords specified in note*1 above, inverted fingerings (i.e. playing E-G-C or G-C-E instead of C-E-G) will produce the same chords as the standard fingering.
- Except for the exception specified in note*2 above, all of the keys that make up a chord must be pressed. Failure to press even a single key will not play the desired FINGERED chord.

■ FULL RANGE CHORD

This accompaniment method makes it possible to play a total of 38 chord variations: the 15 available with FINGERED plus 23 additional variations. The keyboard interprets any input of three or more keys that matches a FULL RANGE CHORD pattern to be a chord. Any multi-key input that is not a FULL RANGE CHORD pattern is interpreted as melody play. Because of this, there is no need for a separate accompaniment keyboard, and the entire keyboard from end-to-end can be used for both melody and chords.

FULL RANGE CHORD Accompaniment Keyboard and Melody Keyboard

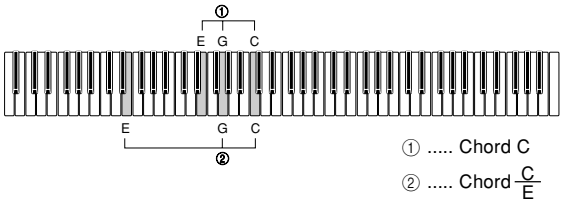


Chords Recognized by This Piano

The following table identifies patterns that are recognized as chords by FULL RANGE CHORD.

Pattern Type	Number of Chord Variations
FINGERED	The 15 chord patterns shown under "FINGERED" on page E-14.
Standard Fingerings	23 standard chord fingerings. The following are examples of the 23 chords available with C as the bass note. C_6 • Cm_6 • C_{69} $\frac{D♭}{C}$ • $\frac{D}{C}$ • $\frac{E}{C}$ • $\frac{F}{C}$ • $\frac{G}{C}$ • $\frac{A♭}{C}$ • $\frac{B♭}{C}$ $\frac{B}{C}$ • $\frac{D♭m}{C}$ • $\frac{Dm}{C}$ • $\frac{Fm}{C}$ • $\frac{Gm}{C}$ • $\frac{Am}{C}$ • $\frac{B♭m}{C}$ $\frac{Ddim}{C}$ • $\frac{A♭_7}{C}$ • $\frac{F_7}{C}$ • $\frac{Fm_7}{C}$ • $\frac{Gm_7}{C}$ • $\frac{A♭_{add9}}{C}$

Example: To play the chord C major and $\frac{C}{E}$.



NOTE

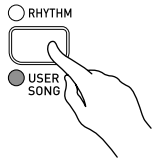
- If there are more than six semitones between the lowest note and the next note to the right, the lowest note is interpreted as a bass note.

Playing Tunes You Download from the Internet

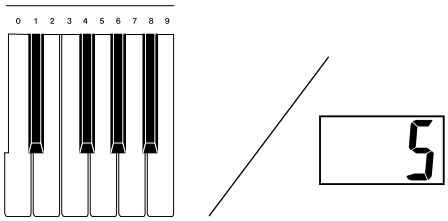
You can save music data for up to 10 tunes you download from the Internet to the digital piano's user song area (No. 0 through 9). Once you store a song in digital piano memory, you can play it back using the following procedure.

1 Press the **USER SONG** button so the USER SONG indicator lamp (below the button) is lit.

- Each press of the button toggles between the upper indicator lamp and lower indicator lamp.



2 While holding down the **FUNCTION** button, press the keyboard keys shown below to input a tune number.



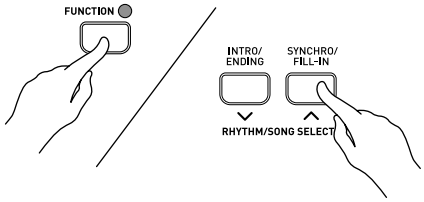
3 Press the **START/STOP** button.

- This starts the playback of the tune.

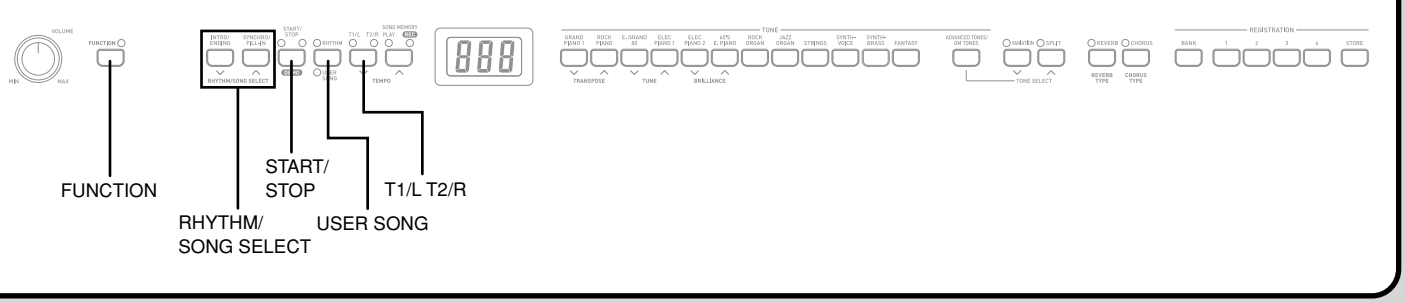
4 Press the **START/STOP** button again to stop tune playback.

NOTE

- You can also cycle through the available tunes in step 2 by holding down the FUNCTION button and pressing the RHYTHM/SONG SELECT [∨] or [∧] button.



- Pressing the two RHYTHM/SONG SELECT buttons at the same time selects tune 0.
- You cannot use layer or split while playing a tune.



Practicing a Tune

You can turn off the left hand part or right hand part of the user song* and play along on the digital piano.

* With song data, the left-hand part is assigned to MIDI Channel 3, while the right-hand part is assigned to MIDI Channel 4.

PREPARATION

- Select the tune you want to practice and adjust the tempo (See "To adjust the tempo" on page E-12).
- The maximum tempo setting for each tune is double the initial default tempo of the tune.
- A number of tunes have tempo changes part way through in order to produce specific musical effects.

1. Use the **T1/L T2/R** button to turn parts on or off.
   - The indicator lamps above the button show the current on/off status of the parts.
2. Press the **START/STOP** button.
   - This starts playback of the tune, without the part you selected in step 1.
3. Play the missing part on the piano's keyboard.
4. Press the **START/STOP** button again to stop song playback.

Using Registration Memory

What is registration memory?

Registration memory lets you save up to 32 (4 areas × 8 banks) digital piano setups (tone, rhythm, tempo, etc.) for instant recall whenever you need them.

Registration Memory Setup Data

The following are the settings that can be saved for each registration memory setup.

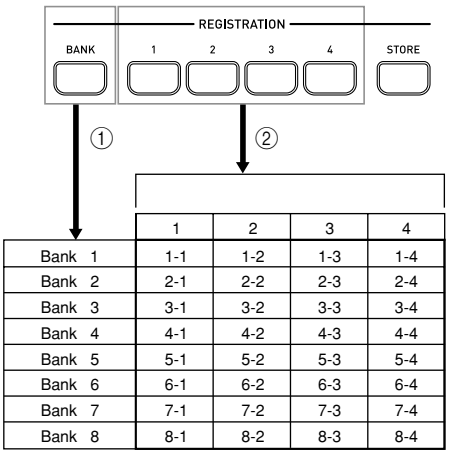
- Tone
- Rhythm
- Tempo
- Layer setting
- Split setting
- Split point
- Effect setting
- DSP setting
- Brilliance setting
- Accompaniment Volume
- Transpose setting
- Pedal function setting
- Damper pedal setting
- SYNCHRO/FILL-IN button setting
- MODE setting

NOTE

- All of the registration memory banks are preset with default data.
- Registration memory functions are disabled while you are using the User Song, Song Memory or demo tune function.

How registration memory organizes its data

Registration memory has four banks, and each bank contains four areas. Use the **BANK** button to select a bank, and the **REGISTRATION** buttons to select an area.

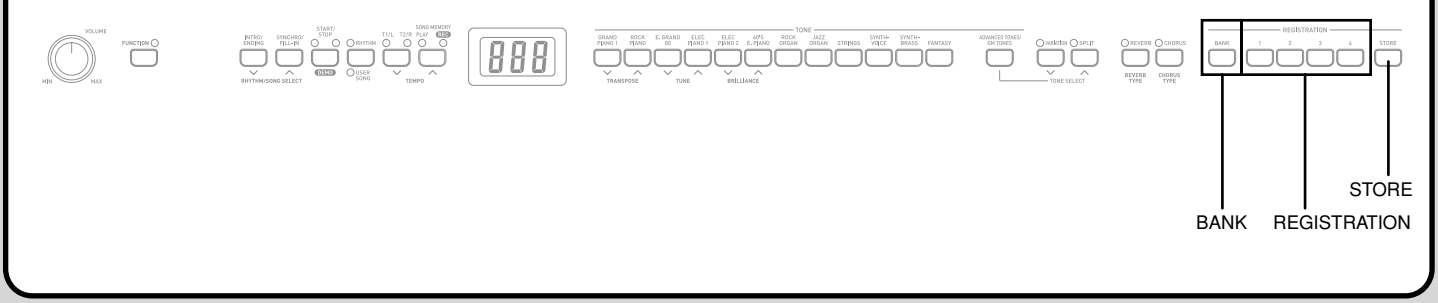


	1	2	3	4
Bank 1	1-1	1-2	1-3	1-4
Bank 2	2-1	2-2	2-3	2-4
Bank 3	3-1	3-2	3-3	3-4
Bank 4	4-1	4-2	4-3	4-4
Bank 5	5-1	5-2	5-3	5-4
Bank 6	6-1	6-2	6-3	6-4
Bank 7	7-1	7-2	7-3	7-4
Bank 8	8-1	8-2	8-3	8-4

① Each press of the **BANK** button cycles through the bank numbers, from 1 to 8.
② Pressing a **REGISTRATION** button (1 to 4) selects the corresponding area in the currently selected bank.

NOTE

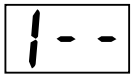
- Storing a new setup to a registration memory area replaces the setup that was previous stored there.



To store a setup in registration memory

1. On the digital piano, configure the tone, rhythm, and other settings you want to save as your setup.
   - See "Registration Memory Setup Data" (page E-18) for more information.
2. Use the **BANK** button to select the registration memory bank where you want to save the setup.
   - This causes the number of the selected bank to appear on the display for about two seconds. If you do not perform the following step within that time, the bank selection screen will disappear.

   Example: Bank 1 selected

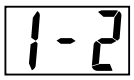


WARNING

- The following step will replace the setup currently in the area you select with the new setup. Make sure you do not need the current setup before performing the next step.

3. While holding down the **STORE** button, press the **REGISTRATION** button (1 to 4) that corresponds to the area where you want to store the setup.
   - You can also change the bank selection at this time by pressing the **BANK** button while holding down the **STORE** button.

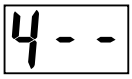
   Example: After button 2 is pressed



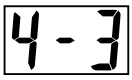
4. Release the **REGISTRATION** and **STORE** buttons.

To recall a setup from registration memory

1. Use the **BANK** button to select the registration memory bank that contains the setup you want to recall.
   - This causes the number of the selected bank to appear on the display for about two seconds. If you do not perform the following step within that time, the bank selection screen will disappear.



2. Press the **REGISTRATION** button (1 to 4) for the area that contains setup you want to recall.



NOTE

- If you press a **REGISTRATION** button without selecting a bank first, the digital piano will recall the setup from the applicable area in the bank you previously last selected.

Registration memory contents are retained even when you turn off digital piano power (page E-25).

Recording to and Playing Back from Song Memory

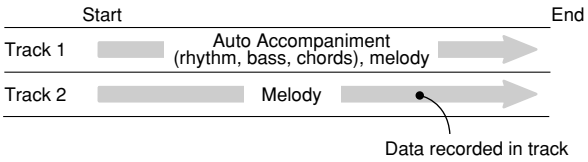
You can store the notes you play in Song Memory for later playback.

NOTE

- You cannot use layer or split with Song Memory record operation.

Tracks

The song memory of this piano records and plays back notes much like a standard tape recorder. There are two tracks, each of which can be recorded separately. Besides notes, each track can be assigned its own tone number. During playback you can adjust the tempo to change the speed of playback.



Song Memory Capacity

- You can store a total of up to about 10,000 notes (Track 1 + Track 2) in Song Memory.
- Recording stops automatically if the number of notes in Song Memory exceeds the maximum while you are recording. This is indicated by the REC indicator lamp turning off.

Other Song Memory Data

The following data is included when recording to Song Memory: keyboard play, selected tone, tempo setting (Track 1 only), pedal operations, reverb and chorus settings, DSP on/off setting, brilliance setting, accompaniment volume setting, selected rhythm (Track 1 only), chord mode (Track 1 only), and intro/fill-in/ending control (Track 1 only).

Recorded Data Storage

This digital piano has a lithium battery to supply power to retain memory contents even while power is off.* The life of the lithium battery is five years after the date of manufacture of the digital piano. Be sure to contact your CASIO service provider about having the lithium battery replaced every five years.

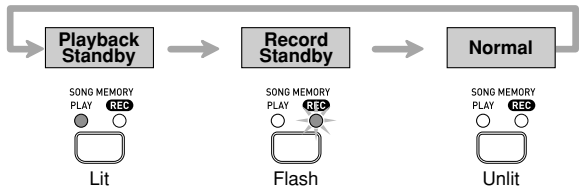
* Never turn off piano power while a record operation is in progress.

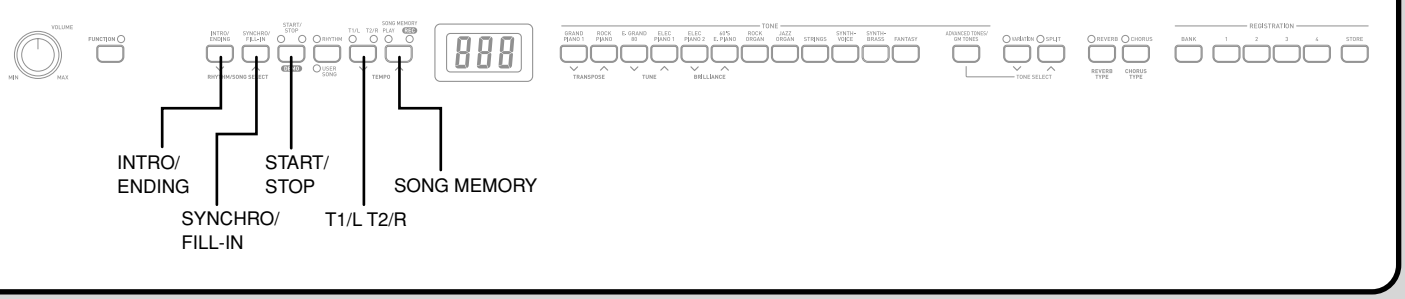
IMPORTANT!

- If the data recorded in a single track uses up all the available Song Memory capacity, you will not be able to record anything in the other track.
- Recording new data to a track automatically deletes any data previously stored in that track.
- Turning off power while a record operation is in progress deletes anything recorded up to that point.
- CASIO COMPUTER CO., LTD. shall not be held responsible for any losses by you or any third party due to loss of data caused by malfunction or repair of this digital piano, or by battery replacement.

SONG MEMORY Button Operation

Each press of the SONG MEMORY button cycles through the functions shown below.





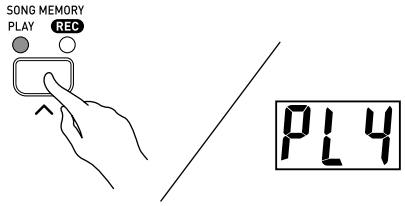
Recording Your Keyboard Play

You can record to either track with or without playback of the other track.

To record to one track without playing back the other

When recording a different tune to Track 2 after recording to Track 1, make sure you carefully read the notes under steps 1 and 2 before actually performing the steps.

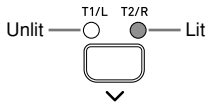
1 Press the **SONG MEMORY** button so the PLAY indicator lamp is lit.



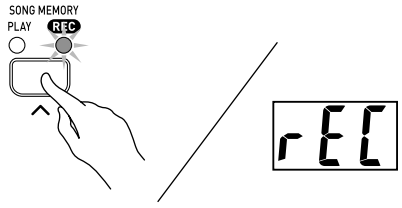
- Select the tone and effects you want to use in your recording, and configure the tempo settings.

NOTE

- If you are recording a different tune to Track 2 after recording to Track 1, press the T1/L T2/R button to turn off the TRACK 1/ LEFT indicator lamp.



2 Press the **SONG MEMORY** button so the REC indicator lamp is flashing.



- At this time the TRACK 1/ LEFT indicator lamp should also be flashing. This indicates that the piano is standing by for recording to Track 1.

NOTE

- If you want to record to Track 2, press the T1/L T2/R button here. This will cause the TRACK2/ RIGHT indicator lamp to flash, which indicates that the piano is standing by for recording to Track 2.

- If you want to use a rhythm and/or auto accompaniment during recording (to Track 1 only), select the rhythm and chord mode.

3 Start playing something on the keyboard.

- This will automatically start recording.
- Actually, there are a variety of different ways to start the record operation. See "Starting the Record Operation" below for more information.

4 When you are finished, press the **START/ STOP** button to stop recording.

- If you are using a rhythm, you can stop recording with an ending pattern by pressing the INTRO/ENDING button.
- Stopping recording causes the REC indicator lamp to go out, and indicator lamp above the button of the track to which you recorded to light.
- To play back the track you just recorded, press the START/STOP button again.

5 After you are finished recording or playing back, press the **SONG MEMORY** button so the PLAY lamp or REC lamp turns off.

Starting the Record Operation

You can use any of the following methods to start a record operation in step 2 of the above procedure.

■ When recording to Track 1 with rhythm or auto accompaniment

- Press the START/STOP button to start recording.
- Press the SYNCHRO/FILL-IN button to put the piano into synchro start standby. Recording will start when you finger a chord in the accompaniment range of the keyboard.
- Press the INTRO/ENDING button to put the piano into synchro start standby. Recording will start and an intro pattern will play when you finger a chord in the accompaniment range of the keyboard.

■ **When recording to Track 1 without rhythm or auto accompaniment**

- Recording will start as soon as you play anything on the keyboard.

■ **When recording to Track 2**

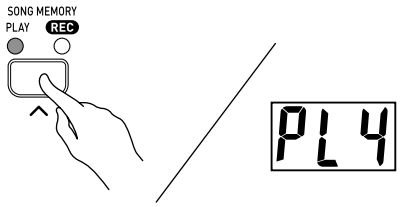
- Press the START/STOP button or play something on the keyboard to start recording.

To record to a track while playing back from the other

After you finish recording, you can play back Track 1 and Track 2 at the same time.

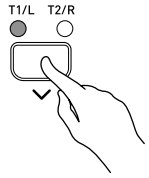
Example: To record to Track 2 while playing back the contents of Track 1

1 Press the **SONG MEMORY** button so the PLAY indicator lamp is lit.



- Select the tone and effects you want to use while recording.

2 Press the **T1/L T2/R** button so TRACK 1/LEFT indicator is lit.



3 Press the **SONG MEMORY** button again.

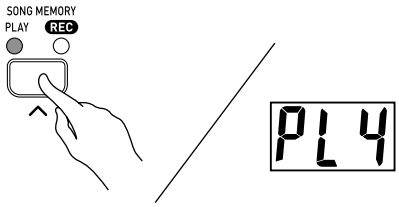
- This causes the TRACK 1/LEFT indicator lamp to flash. Press the T1/L T2/R button, so it causes the TRACK 2/RIGHT indicator lamp to flash, which indicates that the piano is standing by for recording to Track 2.

4 Press the **START/STOP** button or play something on the keyboard to start simultaneous playback from Track 1 and recording to Track 2.

5 When you are finished, press the **START/STOP** button again to stop recording.

Playing Back from Song Memory

1 Press the **SONG MEMORY** button so the PLAY indicator lamp is lit.



2 Use the **T1/L T2/R** button to select the track you want to play back.

- The indicator lamps above the button show the currently selected track.
  - To play back Track 1, the TRACK 1/LEFT indicator lamp should be lit.
  - To play back Track 2, the TRACK 2/RIGHT indicator lamp should be lit.
  - To play back Track 1 and Track 2, both the indicator lamps should be lit.

3 Press the **START/STOP** button.

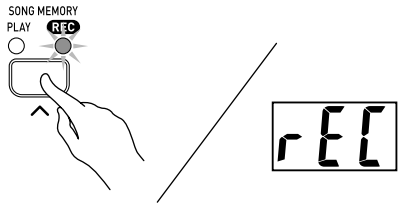
- This starts playback of the track you selected.
- You can change the tempo setting as a track is playing.
- You cannot change the tone setting during playback.
- Press the START/STOP button again to stop playback.

Deleting Song Memory Data

IMPORTANT!

- The procedure below deletes all of the data from the selected track. Note that the delete operation cannot be undone. Check to make sure you really do not need the data in Song Memory before you perform the following steps.

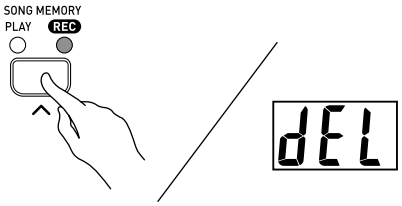
1 Press the **SONG MEMORY** button so the REC indicator lamp is flashing.



2 Use the **T1/L T2/R** button to select the track you want to delete.

- The indicator lamps above the button show the currently selected track.
- To delete Track 1, the TRACK 1/LEFT indicator lamp should be flashing.
- To delete Track 2, the TRACK 2/RIGHT indicator lamp should be flashing.

3 Hold down the **SONG MEMORY** button until the REC indicator lamp stops flashing and remains lit.



4 Press the **T1/L T2/R** button.

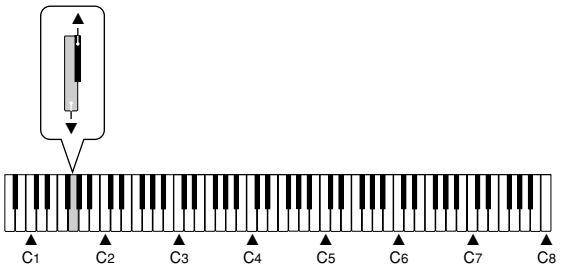
- This deletes the selected track and enters the standby state.

Other Settings

Adjusting Accompaniment Volume

Perform the following operation to change the volume level of the rhythm and chord accompaniment.

1 While holding down the **FUNCTION** button, use the keyboard keys shown below to raise (▲) or lower (▼) the accompaniment volume.

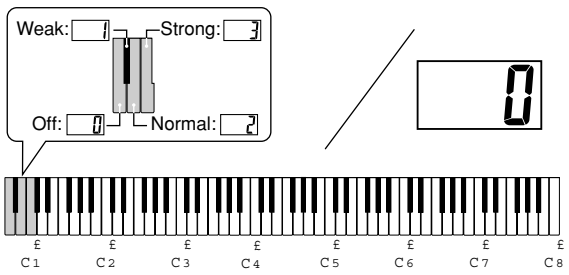


▲ : Raises the accompaniment volume
▼ : Lowers the accompaniment volume

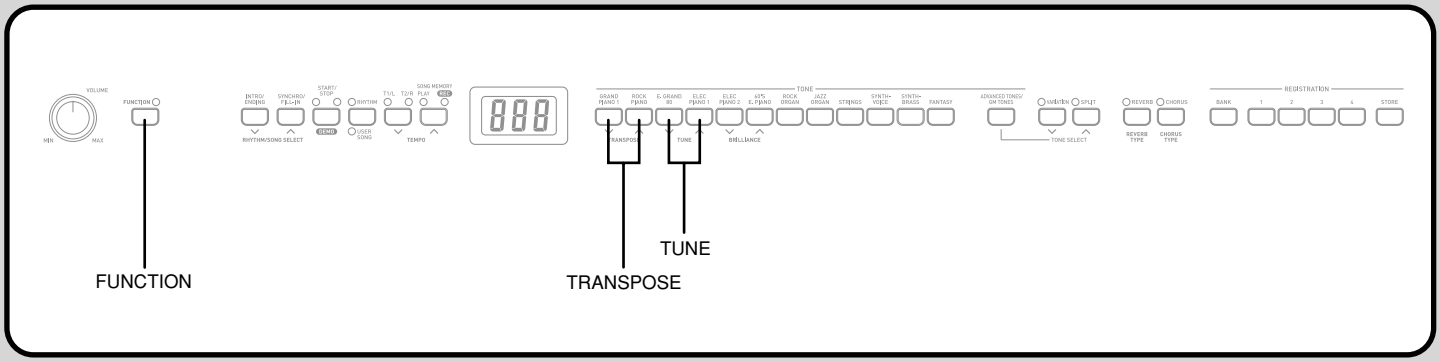
Changing the Keyboard Touch

This setting changes the relative touch of the keyboard keys.

1 While holding down the **FUNCTION** button, press one of the keyboard keys shown below.



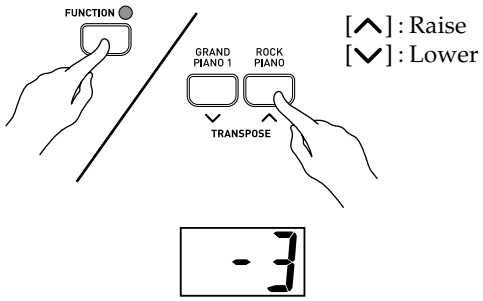
Off
Weak (Strong sound is produced even when relatively light pressure is applied.)
Normal
Strong (Normal sound is produced even when relatively strong pressure is applied.)



Changing the Piano Key

Use this setting to raise or lower the overall key of the keyboard in semitone steps.

1 Holding down the **FUNCTION** button, press the **TRANSPOSE** buttons to raise or lower the overall key of the keyboard.



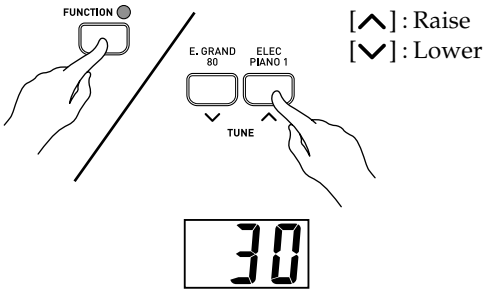
NOTE

- To return the piano key to C, hold down the FUNCTION button and press the TRANSPOSE [v] and [^] buttons at the same time.
- After using Transpose to raise the keyboard to a high key, notes played at the highest range of the keyboard may not sound properly for certain tones.

Changing the Pitch of the Piano to Match Another Instrument

Use this setting to raise or lower the overall pitch of the piano. The setting range is plus or minus 50 cents (100 cents = 1 semitone) from the standard pitch of A4 = 440.0Hz.

1 Holding down the **FUNCTION** button, press the **TUNE** buttons to raise or lower the overall pitch of the piano.



* Each press of the button changes the current setting by approximately 1 cents (1/100 semitone).

NOTE

- Holding down the FUNCTION button and pressing the TUNE buttons [v] and [^] at the same time returns tuning to the standard A4 = 440.0Hz.

Using Digital Piano Setup Memory

When setup memory is turned on, the digital piano will remember its setup* whenever you turn it off. If you turn off setup memory, settings will be cleared when you turn off the digital piano.

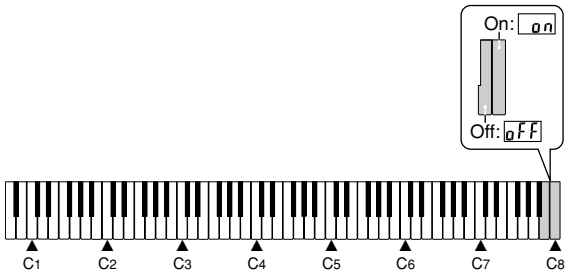
*

■ **Turning off the digital piano while in the rhythm mode**
The next time you turn on the digital piano, non-local control setting (see "Using MIDI" below) will be configured in accordance with setup memory.

■ **Turning off the digital piano while in the user song mode**
The next time you turn on the digital piano, the following settings will be configured in accordance with setup memory.

Rhythm selection, accompaniment volume, keyboard touch, pedal type, damper pedal setting, layered tone volume balance, split point, send channel, accomp MIDI out

1 While holding down the **FUNCTION** button, press one of the keyboard buttons shown below to turn setup memory on or off.



Using MIDI

What is MIDI?

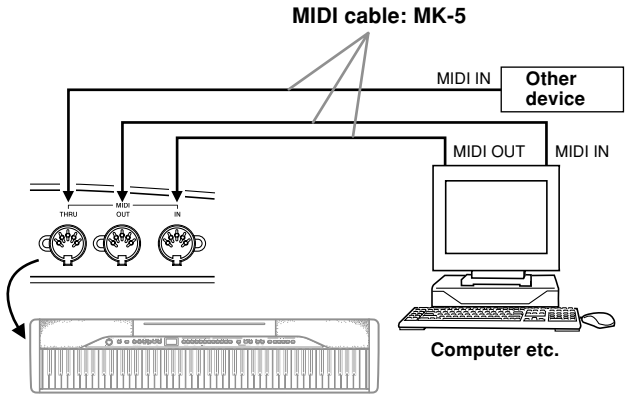
The letters MIDI stand for Musical Instrument Digital Interface, which is the name of a worldwide standard for digital signals and connectors that makes it possible to exchange musical data between musical instruments and computers (machines) produced by different manufacturers.

NOTE

- For detailed information about MIDI Implementation, visit the CASIO website at: http://world.casio.com/.

MIDI Connections

To use a computer or other MIDI device to record and playback the MIDI data produced by this keyboard, you must connect the **MIDI IN** and **MIDI OUT** terminals of both devices in order to send and receive data.
There is a third MIDI terminal named **MIDI THRU**, which passes any MIDI messages received by the **MIDI IN** terminal on to another device.



MIDI Settings

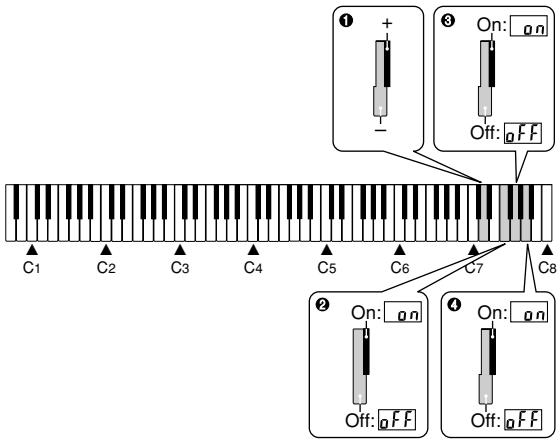
❶ Send Channel
Use this setting to specify one of the MIDI channels (1 through 16) as the Send Channel for sending MIDI messages to an external device.

❷ Accomp/Song MIDI Out
Use this setting to specify whether or not MIDI messages for the piano's auto accompaniment and song memory playback should be sent.

❸ MIDI IN Chord Judge
Specifies whether chord judge should be performed on accompaniment range MIDI Note On messages received from an external device.

❹ Local Control
This setting controls whether or not power is cut off internally from the piano's keyboard and sound source. Turning off Local Control cuts off power to the keyboard and source, which means that the piano does not produce any sound when played. This comes in handy when you want to turn off the piano's keyboard and use its auto accompaniment feature to accompany an external sequencer or other device.

1 While holding down the **FUNCTION** button, press one the keyboard keys shown below to configure the setting you want.



❶ Send Channel
–: Decreases value
+: Increases value

❷ Accomp/Song MIDI Out
Off
On

❸ MIDI IN Chord Judge
Off
On

❹ Local Control
Off
On

Saving the Song Data You Download from the Internet

You can transfer song data from your computer to the digital piano. You can store up to 10 tunes as user songs 0-9. For SMF data you purchase or create, you need to use an SMF Converter to convert it to SMF 0 format before transferring it to the digital piano.

To install the SMF Converter

1 On the computer to which you plan to connect, install the SMF Converter that comes on the CD-ROM that comes bundled with the digital piano.

- On the CD-ROM, double-click "SMFConv-e.exe", and then follow the instructions that appear on your computer screen to install SMF Converter.

* *Before installing SMF Converter, be sure to read the contents of the "smfreadme.txt" file in each language folder on the CD-ROM.*

For information about using SMF Converter, double-click "index.html" in the [help] folder, which was created when you installed SMF Converter. You can also access user documentation from the Windows [Start] menu by clicking [Programs] - [CASIO] - [SMF Converter] - [manual].

* *A browser that supports frames (like Internet Explorer 4 or Netscape Navigator 4.04 or higher) is required to view the SMF Converter manual.*

Minimum Computer System Requirements

* *Operating System:*
Windows 98SE
Windows Me
Windows XP

* *Storage*
At least 10MB free HDD space

* *MIDI interface*

- You can also obtain a copy of the SMF Converter by downloading it at the Web page shown below. After downloading, install the software on your computer.

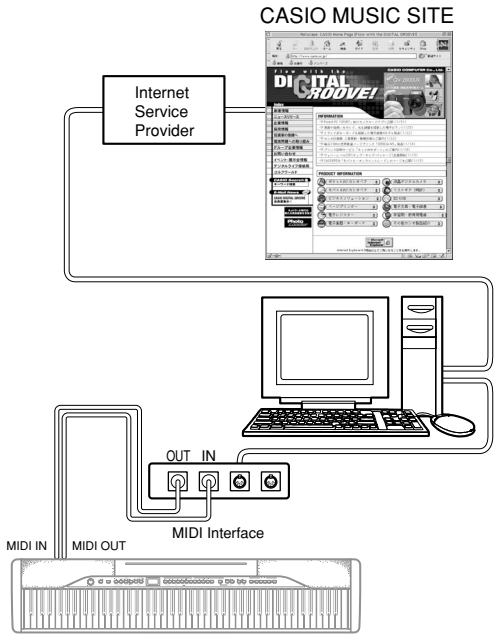
CASIO MUSIC SITE
http://music.casio.com/

- In addition to the software itself, the CASIO MUSIC SITE will also provide you with information about its installation and use. You can also find out about the latest news about your digital piano and other CASIO musical instruments, and much more.

To connect to a computer

Be sure to turn off the digital piano and your computer before connecting them. You should also set the volume controller of the digital piano to a relatively low volume.

1 Connect the digital piano's MIDI interface to your computer's MIDI interface.



2 Turn on the digital piano, and then turn on your computer or other connected device.

3 Start up the software you want to use on your computer.

NOTE

- Performing a digital piano operation while transferring data between it and a computer may interrupt the data transfer. Do not perform any digital piano operations while data transfer is in progress.

Troubleshooting

Symptom	Possible Cause	Action	Reference
No sound produced when keyboard keys are pressed.	1. VOLUME knob set to MIN. 2. Headphones connected to the digital piano. 3. Local Control turned off. 4. Check the current accompaniment mode setting. Normally, the accompaniment keyboard will not produce any note while CASIO CHORD or FINGERED is selected as the accompaniment mode.	1. Move the VOLUME knob more towards MAX. 2. Disconnect the headphones from the digital piano. 3. Turn on Local control. 4. Change the accompaniment mode to NORMAL.	Page E-7 Page E-5 Page E-26 Page E-14
Keyboard out of tune.	1. The piano key is set to a value other than C. 2. Incorrect pitch setting of the piano.	1. Change the piano key setting to C, or turn the digital piano power off and then back on again. 2. Correct the pitch setting, or turn the digital piano power off and then back on again.	Page E-25 Page E-25
No sound produced by demo tune play.	1. VOLUME knob set to MIN. 2. Headphones connected to the digital piano.	1. Move the VOLUME knob more towards MAX. 2. Disconnect the headphones from the digital piano.	Page E-7 Page E-5
Memory contents deleted.	Lithium battery is dead.	Contact your CASIO Service Provider for replacement of the lithium battery.	Page E-30
No sound produced by connected external MIDI sound source when the digital piano keys are pressed.	1. The digital piano Send Channel does not match the Send Channel of the MIDI sound source. 2. Volume or expression setting of the external sound source is set to 0.	1. Change the Send Channel settings so they are identical. 2. Change the volume or expression setting of the external sound source to an appropriate value.	Page E-26 See the documentation that comes with the external sound source.
A tone's quality and volume sounds slightly different depending where it is played on the keyboard.	This is an unavoidable result of the digital sampling process,* and does not indicate malfunction. * Multiple digital samples are taken for the low range, middle range, and high range of the original musical instrument. Because of this, there may be a very slight difference in tonal quality and volume between sample ranges.		

Specifications

Model:	PX-310
Keyboard:	88 piano keys (with touch response)
Polyphony:	32 notes, maximum
Tones:	12 panel tones + 12 variation tones + 40 advanced tones + 128 GM tones + 10 drum sets; with layer, split
Digital Effects:	Reverb (4 types), Chorus (4 types), DSP, Brilliance
Demo Tunes:	Sequential looping of all 3 tunes (Original)
Auto Accompaniment:	• Number of Rhythms: 120 • Tempo Range: 30 to 255 • Controllers: START/STOP, INTRO/ENDING, SYNCHRO/FILL-IN • Modes: Normal, CASIO CHORD, FINGERED, FULL RANGE CHORD • Accompaniment Volume: Adjustable
User Songs:	• Number of Tunes: 10 tunes maximum (Approximately 145 KB*) * Based on 1 KB = 1024 bytes • Part On/Off: Left hand, right hand
Song Memory:	• Operations: Real-time recording, playback • Capacity: Approximately 10,000 notes (2 tracks total) • Memory Backup: Built-in lithium battery (Battery Life: 5 years)
Registration Memory:	Number of Memory Areas: 32 (4 sets × 8 banks)
Pedals:	Damper, Soft/Sostenuto (Selectable)
Other Functions:	• Touch: 3 types, off • Transpose: 1 octave (F♯ to C to F) • Tuning: A4 = 440.0Hz ±50 cents (adjustable)
MIDI:	16 multi-timbre receive
Input/Output:	• Headphones: Stereo mini jacks × 2 • Pedal: Standard jacks × 2 • LINE OUT (R)(L/MONO): Standard jacks × 2 Output impedance: 2.3kΩ Output voltage: 1.0V (RMS) MAX • LINE IN (R)(L/MONO): Standard jacks × 2 Input impedance: 9.0kΩ Input voltage: 200mV • Power: 12V DC • MIDI (THRU) (OUT) (IN) • Pedal connector (for optional SP-30 only)
Speakers:	(12cm × 6cm OVAL) × 2 + ϕ 5cm × 2 (Output: 8.0W + 8.0W)
Power Supply:	AC Adaptor: AD-12
Power Consumption:	12V ⎓ 18W
Dimensions:	132.3 × 27.8 × 13.2cm ($52\ ^{1}/_{16} \times 10\ ^{15}/_{16} \times 5\ ^{3}/_{16}$ inch)
Weight:	Approximately 11.9 kg (26.2 lbs)

• Design and specifications are subject to change without notice.

Operational Precautions

Locating the Unit

Avoid the following locations.

- Areas exposed to direct sunlight and high humidity
- Areas subjected to very low temperatures
- Near a radio, TV, video deck, or tuner (unit can cause interference with audio or video signals)

Care of the Unit

- Never use benzene, alcohol, thinner or other such chemicals to clean the exterior of the unit.
- To clean the keyboard, use a soft cloth dampened with a weak solution of a mild neutral detergent and water. Wring out all excess moisture from the cloth before wiping.

Lithium Battery

This unit is equipped with a lithium battery to provide power needed to retain memory contents while unit power is turned off. Should the lithium battery go dead, all memory contents will be lost whenever you turn unit power off. The normal life of the lithium battery is five years from the time that the battery was installed. Be sure to periodically contact your retailer or authorized service provider to have the lithium battery replaced. Note that you will be charged separately for lithium battery replacement.

- Note that CASIO COMPUTER CO., LTD. shall not be held liable for any damages or losses or any claims by third parties arising from corruption or loss of data caused by malfunction or repair of the unit, or from battery replacement.

You may notice lines in the finish of the case of this product. These lines are the result of the molding process used to shape the plastic of the case. They are not cracks or breaks in the plastic, and are no cause for concern.

NOTE

- Unauthorized reproduction of this manual in its entirety or in part is expressly forbidden. All rights reserved.
- CASIO COMPUTER CO., LTD. shall not be held liable for any damages or losses or any claims by third parties arising from use of this product or this manual.
- The contents of this manual are subject to change without notice.

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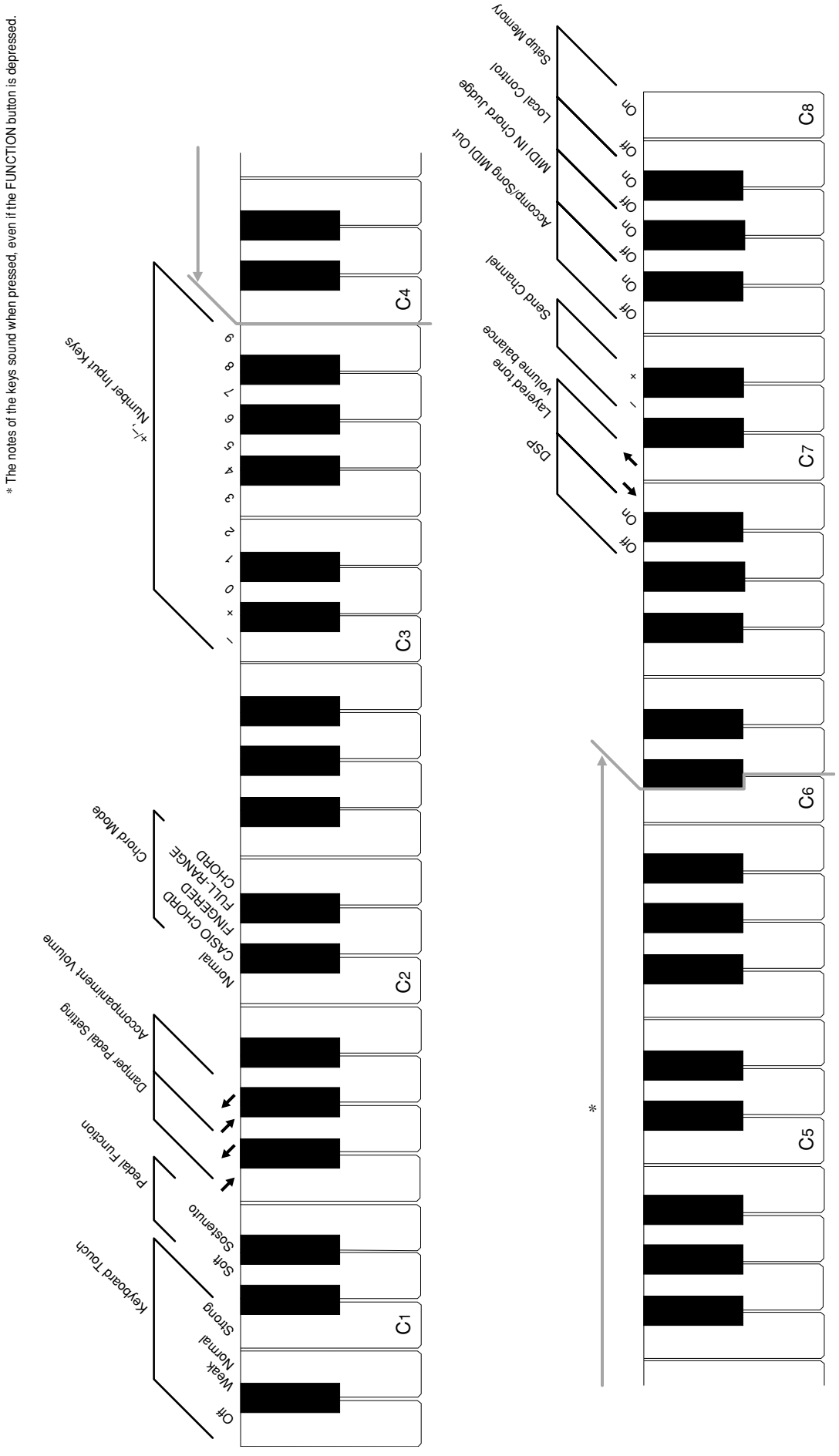
Setting Control Key Chart

While the FUNCTION button is depressed, the keyboard keys can be used to perform a variety of different setting functions.

- A value next to a note name indicates the relative position of the note on the keyboard as shown below.



Appendix/Apéndice

Tone List/Lista de sonidos

Panel Tones/Sonidos de panel

②	③	④	⑤	⑥	③	④	⑤
GRAND PIANO 1	16	0	100	GRAND PIANO 2	32	1	100
ROCK PIANO	16	4	100	DANCE PIANO	16	6	100
E.GRAND 80	32	2	48	PIANO PAD	16	7	100
ELEC.PIANO 1	32	4	48	DYNO ELEC.PIANO	32	4	49
ELEC.PIANO 2	16	5	49	FM ELEC.PIANO	16	5	48
60'S ELEC.PIANO	32	4	52	VIBRAPHONE	32	11	49
ROCK ORGAN	32	16	51	DRAWBAR ORGAN	16	16	49
JAZZ ORGAN	16	17	50	CLAVI	32	7	48
STRINGS	32	49	48	SYNTH-STRINGS	32	50	48
SYNTH-VOICE	32	54	48	CHOIR	16	52	49
SYNTH-BRASS	16	62	49	SYNTH-PAD	16	90	48
FANTASY	16	88	48	NEW AGE	16	88	49

① No./Nº
② Tone Name/Nombre de sonidos
③ Maximum Polyphony/Polifonía máxima
④ Program Change/Cambio de programa
⑤ Bank Select MSB/MSB de selección de banco
⑥ Variation Tones/Sonidos de variación

Advanced Tones/Sonidos avanzados

①	②	③	④	⑤
0	LA PIANO	32	3	100
1	MELLOW PIANO	16	2	100
2	MODERN PIANO	16	5	100
3	HONKY-TONK	16	8	100
4	OCTAVE PIANO	16	9	100
5	POP ELEC.PIANO	16	4	50
6	SYNTH-STR E.PIANO	16	4	53
7	HARPSICHORD	32	6	49
8	MARIMBA	32	12	48
9	ROTARY DRAWBAR	32	16	50
10	ROTARY PERC.ORGAN	16	17	49
11	OVD ROTARY ORGAN	32	16	52
12	CHURCH ORGAN	16	19	49
13	CHAPEL ORGAN	32	19	50

①	②	③	④	⑤
14	NYLON STR.GUITAR	32	24	48
15	STEEL STR.GUITAR	32	25	48
16	JAZZ GUITAR	32	26	48
17	CHORUS CLEAN GUITAR	32	27	48
18	OVERDRIVE GUITAR	32	27	51
19	ACOUSTIC BASS	32	32	49
20	RIDE BASS	16	32	50
21	FINGERED BASS	32	33	48
22	ANALOG SYNTH-BASS	32	38	52
23	VIOLIN	32	40	48
24	HARP	32	46	48
25	STRING ENSEMBLE	16	48	49
26	80'S SYNTH-STR	16	50	50
27	TRUMPET	32	56	48

①	②	③	④	⑤
28	TROMBONE	16	57	49
29	STEREO BRASS	16	61	49
30	BREATHY ALTO SAX	16	65	50
31	ALTO SAX	32	65	49
32	TENOR SAX	16	66	49
33	CLARINET	16	71	49
34	FLUTE	32	73	48
35	SAWTOOTH LEAD	16	81	48
36	SQUARE LEAD	16	80	48
37	WARM PAD	32	89	48
38	SPACE VOICE	16	91	48
39	STAR VOICE	16	91	49

GM Tones/Sonidos GM

①	②	③	④	⑤
40	GM PIANO 1	32	0	0
41	GM PIANO 2	32	1	0
42	GM PIANO 3	32	2	0
43	GM HONKY-TONK	16	3	0
44	GM E.PIANO 1	32	4	0
45	GM E.PIANO 2	16	5	0
46	GM HARPSICHORD	32	6	0
47	GM CLAVI	32	7	0
48	GM CELESTA	32	8	0
49	GM GLOCKENSPIEL	32	9	0
50	GM MUSIC BOX	16	10	0
51	GM VIBRAPHONE	32	11	0
52	GM MARIMBA	32	12	0
53	GM XYLOPHONE	32	13	0
54	GM TUBULAR BELL	32	14	0
55	GM DULCIMER	16	15	0
56	GM ORGAN 1	32	16	0
57	GM ORGAN 2	16	17	0
58	GM ORGAN 3	16	18	0
59	GM PIPE ORGAN	16	19	0
60	GM REED ORGAN	32	20	0
61	GM ACCORDION	16	21	0
62	GM HARMONICA	32	22	0
63	GM BANDONEON	16	23	0
64	GM NYLON STR.GUITAR	32	24	0
65	GM STEEL STR.GUITAR	32	25	0
66	GM JAZZ GUITAR	32	26	0
67	GM CLEAN GUITAR	32	27	0
68	GM MUTE GUITAR	32	28	0
69	GM OVERDRIVE GT	16	29	0
70	GM DISTORTION GT	16	30	0
71	GM GT HARMONICS	32	31	0
72	GM ACOUSTIC BASS	32	32	0
73	GM FINGERED BASS	32	33	0
74	GM PICKED BASS	32	34	0
75	GM FRETLESS BASS	32	35	0
76	GM SLAP BASS 1	32	36	0
77	GM SLAP BASS 2	32	37	0
78	GM SYNTH-BASS 1	16	38	0
79	GM SYNTH-BASS 2	32	39	0
80	GM VIOLIN	32	40	0
81	GM VIOLA	32	41	0
82	GM CELLO	32	42	0
83	GM CONTRABASS	32	43	0
84	GM TREMOLO STRINGS	32	44	0
85	GM PIZZICATO	32	45	0
86	GM HARP	32	46	0
87	GM TIMPANI	32	47	0

①	②	③	④	⑤
88	GM STRINGS 1	32	48	0
89	GM STRINGS 2	32	49	0
90	GM SYNTH-STRINGS 1	32	50	0
91	GM SYNTH-STRINGS 2	32	51	0
92	GM CHOIR AAHS	32	52	0
93	GM VOICE DOO	32	53	0
94	GM SYNTH-VOICE	32	54	0
95	GM ORCHESTRA HIT	16	55	0
96	GM TRUMPET	32	56	0
97	GM TROMBONE	32	57	0
98	GM TUBA	32	58	0
99	GM MUTE TRUMPET	32	59	0
100	GM FRENCH HORN	16	60	0
101	GM BRASS	32	61	0
102	GM SYNTH-BRASS 1	32	62	0
103	GM SYNTH-BRASS 2	16	63	0
104	GM SOPRANO SAX	32	64	0
105	GM ALTO SAX	32	65	0
106	GM TENOR SAX	32	66	0
107	GM BARITONE SAX	32	67	0
108	GM OBOE	32	68	0
109	GM ENGLISH HORN	32	69	0
110	GM BASSOON	32	70	0
111	GM CLARINET	32	71	0
112	GM PICCOLO	32	72	0
113	GM FLUTE	32	73	0
114	GM RECORDER	32	74	0
115	GM PAN FLUTE	32	75	0
116	GM BOTTLE BLOW	32	76	0
117	GM SHAKUHACHI	16	77	0
118	GM WHISTLE	32	78	0
119	GM OCARINA	32	79	0
120	GM SQUARE LEAD	16	80	0
121	GM SAWTOOTH LEAD	16	81	0
122	GM CALLIOPE	16	82	0
123	GM CHIFF LEAD	16	83	0
124	GM CHARANG	16	84	0
125	GM VOICE LEAD	16	85	0
126	GM FIFTH LEAD	16	86	0
127	GM BASS+LEAD	16	87	0
128	GM FANTASY	16	88	0
129	GM WARM PAD	32	89	0
130	GM POLYSYNTH	16	90	0
131	GM SPACE CHOIR	16	91	0
132	GM BOWED GLASS	16	92	0
133	GM METAL PAD	16	93	0
134	GM HALO PAD	16	94	0
135	GM SWEEP PAD	32	95	0

①	②	③	④	⑤
136	GM RAIN DROP	16	96	0
137	GM SOUND TRACK	16	97	0
138	GM CRYSTAL	16	98	0
139	GM ATMOSPHERE	16	99	0
140	GM BRIGHTNESS	16	100	0
141	GM GOBLINS	16	101	0
142	GM ECHOES	32	102	0
143	GM SF	16	103	0
144	GM SITAR	16	104	0
145	GM BANJO	32	105	0
146	GM SHAMISEN	32	106	0
147	GM KOTO	32	107	0
148	GM THUMB PIANO	32	108	0
149	GM BAGPIPE	16	109	0
150	GM FIDDLE	32	110	0
151	GM SHANAI	32	111	0
152	GM TINKLE BELL	32	112	0
153	GM AGOGO	32	113	0
154	GM STEEL DRUMS	16	114	0
155	GM WOOD BLOCK	32	115	0
156	GM TAIKO	32	116	0
157	GM MELODIC TOM	32	117	0
158	GM SYNTH-DRUM	32	118	0
159	GM REVERSE CYMBAL	32	119	0
160	GM GT FRET NOISE	32	120	0
161	GM BREATH NOISE	32	121	0
162	GM SEASHORE	16	122	0
163	GM BIRD	16	123	0
164	GM TELEPHONE	32	124	0
165	GM HELICOPTER	32	125	0
166	GM APPLAUSE	16	126	0
167	GM GUNSHOT	32	127	0

Drum Sets/Ajustes de batería

①	②	③	④	⑤
168	STANDARD SET 1	–	0	120
169	STANDARD SET 2	–	1	120
170	ROOM SET	–	8	120
171	POWER SET	–	16	120
172	ELECTRONIC SET	–	24	120
173	SYNTH SET 1	–	25	120
174	SYNTH SET 2	–	30	120
175	JAZZ SET	–	32	120
176	BRUSH SET	–	40	120
177	ORCHESTRA SET	–	48	120

Rhythm List/Lista de ritmos

① No./№ ② Rhythm Name/Nombre de ritmo

①	②
8 BEAT	
000	8 BEAT 1
001	8 BEAT 2
002	8 BEAT 3
003	8 BEAT POP 1
004	8 BEAT POP 2
005	60'S SOUL
006	8 BEAT DANCE
007	POP ROCK
16 BEAT	
008	16 BEAT 1
009	16 BEAT 2
010	16 BEAT 3
011	SLOW 16 BEAT
012	16 BEAT SHUFFLE 1
013	16 BEAT SHUFFLE 2
014	FUNK
015	LATIN FUSION
POPS	
016	POP 1
017	POP 2
018	GUITAR POP
019	SOUL
020	POP SHUFFLE
021	SOUL POP
022	WORLD POP
023	MELLOW R&B
024	60'S POP
025	OLDIES POP
026	POP WALTZ
BALLAD	
027	8 BEAT BALLAD 1
028	8 BEAT BALLAD 2
029	16 BEAT BALLAD 1
030	16 BEAT BALLAD 2
031	16 BEAT BALLAD 3
032	6/8 BALLAD
033	ROCK BALLAD
034	POP BALLAD
035	OLDIES BALLAD
036	SERENADE
ROCK	
037	ROCK 1
038	ROCK 2
039	R&B
040	SHUFFLE ROCK
041	60'S ROCK
042	SHUFFLE BOOGIE
043	BLUES
044	TWIST
DANCE	
045	TRANCE
046	RAVE
047	TECHNO
048	HOUSE
049	LATIN HOUSE
050	DANCE
051	MODERN R&B
052	HIP-HOP
053	DANCE POP 1
054	DANCE POP 2
055	DISCO SOUL
JAZZ	
056	FAST BIG BAND
057	MIDDLE BIG BAND
058	JAZZ COMBO 1
059	SWING
060	SLOW SWING
061	MODERN JAZZ
062	FOX TROT
063	QUICKSTEP
064	JAZZ WALTZ
EUROPIAN	
065	POLKA
066	POLKA FOX
067	POP POLKA
068	MARCH 1
069	GERMAN MARCH
070	WALTZ 1
071	WALTZ 2
072	VIENNESE WALTZ
073	FRENCH WALTZ

①	②
LATIN/VARIOUS	
074	BOSSA NOVA
075	SAMBA
076	MERENGUE
077	CUMBIA
078	CHA-CHA-CHA
079	BEGUINE
080	BOLERO
081	MAMBO
082	RHUMBA
083	TANGO
084	REGGAE
085	SKA
086	LATIN DISCO
087	BLUEGRASS
088	COUNTRY
089	COUNTRY SHUFFLE
090	COUNTRY WALTZ
091	FAST GOSPEL
092	SLOW GOSPEL
093	BROADWAY
094	DIXIE
095	PASODOBLE
096	HAWAIIAN
097	ADANI
098	BALADI
099	SYMPHONY
FOR PIANO	
100	PIANO BALLAD 1
101	PIANO BALLAD 2
102	PIANO BALLAD 3
103	EP BALLAD 1
104	EP BALLAD 2
105	BLUES BALLAD
106	MELLOW JAZZ
107	JAZZ COMBO 2
108	RAGTIME
109	BOOGIE-WOOGIE
110	ARPEGGIO 1
111	ARPEGGIO 2
112	ARPEGGIO 3
113	PIANO BALLAD 4
114	6/8 MARCH
115	MARCH 2
116	2 BEAT
117	WALTZ 3
118	WALTZ 4
119	WALTZ 5

NOTE

- Rhythms 110 through 119 consist of chord accompaniments only, without any drums or other percussion instruments. These rhythms do not sound unless CASIO CHORD, FINGERED, or FULL RANGE CHORD is selected as the accompaniment mode. With such rhythms, make sure that CASIO CHORD, FINGERED, or FULL RANGE CHORD is selected before you try playing chords.

NOTA

- Los ritmos 110 al 119 consisten solamente de acompañamientos de acordes, sin ninguna batería ni otros instrumentos de percusión. Estos ritmos no suenan a menos que CASIO CHORD, FINGERED o FULL RANGE CHORD sean seleccionados como el modo de acompañamiento. Con tales ritmos, asegúrese de que se selecciona CASIO CHORD, FINGERED o FULL RANGE CHORD, antes de tratar de ejecutar los acordes.

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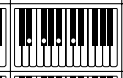
Drum Assignment List/Lista de asignación de batería

"←" Indicates the same sound as STANDARD SET 1./"←" Indica el mismo sonido que STANDARD SET 1.

Key/ Note number	DRUMS SET LIST									
	STANDARD SET 1	STANDARD SET 2	ROOM SET	POWER SET	ELEC. SET	SYNTH SET 1	SYNTH SET 2	JAZZ SET	BRUSH SET	ORCHESTRA SET
C-1 0	METRONOME CLICK	←	←	←	←	←	←	←	←	←
C#-1 1	METRONOME BELL	←	←	←	←	←	←	←	←	←
D-1 2	METRONOME CLICK	←	←	←	←	←	←	←	←	←
D#-1 3	METRONOME BELL	←	←	←	←	←	←	←	←	←
E-1 4	—	—	—	—	—	—	—	—	—	—
F-1 5	—	—	—	—	—	—	—	—	—	—
F#-1 6	LOW TOM 2b	←	←	←	←	←	←	←	←	←
G-1 7	LOW TOM 1b	←	←	←	←	←	←	←	←	←
G#-1 8	MID TOM 2b	←	←	←	←	←	←	←	←	←
A-1 9	MID TOM 1b	←	←	←	←	←	←	←	←	←
A#-1 10	HIGH TOM 2b	←	←	←	←	←	←	←	←	←
B-1 11	HIGH TOM 1b	←	←	←	←	←	←	←	←	←
C0 12	CRASH CYMBAL 1a	←	←	←	←	←	←	←	←	←
C#0 13	CRASH CYMBAL 1b	←	←	←	←	←	←	←	←	←
D0 14	CRASH CYMBAL 1c	←	←	←	←	←	←	←	←	←
D#0 15	CRASH CYMBAL 2a	←	←	←	←	←	←	←	←	←
E0 16	CRASH CYMBAL 2b	←	←	←	←	←	←	←	←	←
F0 17	CRASH CYMBAL 2c	←	←	←	←	←	←	←	←	←
F#0 18	RIDE CYMBAL 1a	←	←	←	←	←	←	←	←	←
G0 19	RIDE CYMBAL 1b	←	←	←	←	←	←	←	←	←
G#0 20	RIDE CYMBAL 1c	←	←	←	←	←	←	←	←	←
A0 21	RIDE CYMBAL 2a	←	←	←	←	←	←	←	←	←
A#0 22	RIDE CYMBAL 2b	←	←	←	←	←	←	←	←	←
B0 23	RIDE CYMBAL 2c	←	←	←	←	←	←	←	←	←
C1 24	—	—	—	—	—	—	—	—	—	—
C#1 25	—	—	—	—	—	—	—	—	—	—
D1 26	—	—	—	—	—	—	—	—	—	—
D#1 27	HIGH Q	←	←	←	←	←	←	←	←	CLOSED HI-HAT
E1 28	SLAP	←	←	←	←	←	←	←	←	PEDAL HI-HAT
F1 29	SCRATCH PUSH	←	←	←	←	←	←	←	←	OPEN HI-HAT
F#1 30	SCRATCH PULL	←	←	←	←	←	←	←	←	RIDE CYMBAL 1
G1 31	STICKS	←	←	←	←	←	←	←	←	←
G#1 32	SQUARE CLICK	←	←	←	←	←	←	←	←	←
A1 33	METRONOME CLICK	←	←	←	←	←	←	←	←	←
A#1 34	METRONOME BELL	←	←	←	←	←	←	←	←	←
B1 35	STANDARD1 KICK 2	STANDARD2 KICK 2	ROOM KICK 2	POWER KICK 2	ELEC KICK 2	SYNTH 1 KICK 2	SYNTH 2 KICK 2	JAZZ KICK 2	BRUSH KICK 2	JAZZ KICK 1
C2 36	STANDARD1 KICK 1	STANDARD2 KICK 1	ROOM KICK 1	POWER KICK 1	ELEC KICK 1	SYNTH 1 KICK 1	SYNTH 2 KICK 1	JAZZ KICK 1	BRUSH KICK 1	CONCERT BASS DRUM
C#2 37	SIDE STICK	←	←	←	←	SYNTH 1 RIM SHOT	←	←	←	←
D2 38	STANDARD1 SNARE 1	STANDARD2 SNARE 1	ROOM SNARE 1	POWER SNARE 1	ELEC SNARE 1	SYNTH 1 SNARE 1	SYNTH 2 SNARE 1	JAZZ SNARE 1	BRUSH TAP	CONCERT SNARE
D#2 39	HAND CLAP 1	←	←	←	←	SYNTH HAND CLAP	←	HAND CLAP 2	BRUSH SLAP	CASTANETS
E2 40	STANDARD1 SNARE 2	STANDARD2 SNARE 2	ROOM SNARE 2	POWER SNARE 2	ELEC SNARE 2	SYNTH 1 SNARE 2	SYNTH 2 SNARE 2	JAZZ SNARE 2	BRUSH SWIRL	CONCERT SNARE
F2 41	LOW TOM 2	←	ROOM LOW TOM 2	POWER LOW TOM 2	ELEC LOW TOM 2	SYNTH 1 LOW TOM 2	SYNTH 2 LOW TOM 2	←	←	TIMPANI F
F#2 42	CLOSED HI-HAT	←	←	←	←	SYNTH 1 CHH	SYNTH 2 CHH	←	←	TIMPANI F♯
G2 43	LOW TOM 1	←	ROOM LOW TOM 1	POWER LOW TOM 1	ELEC LOW TOM 1	SYNTH 1 LOW TOM 1	SYNTH 2 LOW TOM 1	←	←	TIMPANI G
G#2 44	PEDAL HI-HAT	←	←	←	←	SYNTH 1 PHH	SYNTH 2 PHH	←	←	TIMPANI A♭
A2 45	MID TOM 2	←	ROOM MID TOM 2	POWER MID TOM 2	ELEC MID TOM 2	SYNTH 1 MID TOM 2	SYNTH 2 MID TOM 2	←	←	TIMPANI A
A#2 46	OPEN HI-HAT	←	←	←	←	SYNTH 1 OHH	SYNTH 2 OHH	←	←	TIMPANI B♭
B2 47	MID TOM 1	←	ROOM MID TOM 1	POWER MID TOM 1	ELEC MID TOM 1	SYNTH 1 MID TOM 1	SYNTH 2 MID TOM 1	←	←	TIMPANI B
C3 48	HIGH TOM 2	←	ROOM HI TOM 2	POWER HI TOM 2	ELEC HI TOM 2	SYNTH 1 HI TOM 2	SYNTH 2 HI TOM 2	←	←	TIMPANI c
C#3 49	CRASH CYMBAL 1	←	←	←	←	SYNTH 1 CYMBAL	SYNTH 2 CYMBAL 1	←	←	TIMPANI c♯
D3 50	HIGH TOM 1	←	ROOM HI TOM 1	POWER HI TOM 1	ELEC HI TOM 1	SYNTH 1 HI TOM 1	SYNTH 2 HI TOM 1	←	←	TIMPANI d
D#3 51	RIDE CYMBAL 1	←	←	←	←	SYNTH 1 RIDE	SYNTH 2 RIDE 1	←	←	TIMPANI e♭
E3 52	CHINESE CYMBAL	←	←	←	REVERSE CYMBAL	←	←	←	←	TIMPANI e
F3 53	RIDE BELL	←	←	←	←	←	←	←	←	TIMPANI f
F#3 54	TAMBOURINE	←	←	←	←	SYNTH 1 TAMBOURINE	←	←	←	←
G3 55	SPLASH CYMBAL	←	←	←	←	←	←	←	←	←
G#3 56	COWBELL	←	←	←	←	SYNTH 1 COWBELL	←	←	←	←
A3 57	CRASH CYMBAL 2	←	←	←	←	←	SYNTH 2 CYMBAL 2	←	←	CONCERT CYMBAL 2
A#3 58	VIBRA-SLAP	←	←	←	←	←	←	←	←	←
B3 59	RIDE CYMBAL 2	←	←	←	←	←	SYNTH 2 RIDE 2	←	←	CONCERT CYMBAL 1
C4 60	HIGH BONGO	←	←	←	←	←	←	←	←	←
C#4 61	LOW BONGO	←	←	←	←	←	←	←	←	←
D4 62	MUTE HIGH CONGA	←	←	←	←	SYNTH 1 HIGH CONGA	←	←	←	←
D#4 63	OPEN HIGH CONGA	←	←	←	←	SYNTH 1 MID CONGA	←	←	←	←
E4 64	LOW CONGA	←	←	←	←	SYNTH 1 LOW CONGA	←	←	←	←
F4 65	HIGH TIMBALE	←	←	←	←	←	←	←	←	←
F#4 66	LOW TIMBALE	←	←	←	←	←	←	←	←	←
G4 67	HIGH AGOGO	←	←	←	←	←	←	←	←	←
G#4 68	LOW AGOGO	←	←	←	←	←	←	←	←	←
A4 69	CABASA	←	←	←	←	←	←	←	←	←
A#4 70	MARACAS	←	←	←	←	SYNTH 1 MARACAS	←	←	←	←
B4 71	SHORT HI WHISTLE	←	←	←	←	←	←	←	←	←
C5 72	LONG LOW WHISTLE	←	←	←	←	←	←	←	←	←
C#5 73	SHORT GUIRO	←	←	←	←	←	←	←	←	←
D5 74	LONG GUIRO	←	←	←	←	←	←	←	←	←
D#5 75	CLAVES	←	←	←	←	SYNTH 1 CLAVES	←	←	←	←
E5 76	HIGH WOOD BLOCK	←	←	←	←	←	←	←	←	←
F5 77	LOW WOOD BLOCK	←	←	←	←	←	←	←	←	←
F#5 78	MUTE CUICA	←	←	←	←	←	←	←	←	←
G5 79	OPEN CUICA	←	←	←	←	←	←	←	←	←
G#5 80	MUTE TRIANGLE	←	←	←	←	←	←	←	←	←
A5 81	OPEN TRIANGLE	←	←	←	←	←	←	←	←	←
A#5 82	SHAKER	←	←	←	←	←	←	←	←	←
B5 83	JINGLE BELL	←	←	←	←	←	←	←	←	←
C6 84	BELL TREE	←	←	←	←	←	←	←	←	←
C#6 85	CASTANETS	←	←	←	←	←	←	←	←	←
D6 86	MUTE SURDO	←	←	←	←	←	←	←	←	←
D#6 87	OPEN SURDO	←	←	←	←	←	←	←	←	←
E6 88	APPLAUSE	←	←	←	←	←	←	←	←	←
F6 89	APPLAUSE2	←	←	←	←	←	←	←	←	←
F#6 90	—	—	—	—	—	—	—	—	—	—
G6 91	—	—	—	—	—	—	—	—	—	—
G#6 92	—	—	—	—	—	—	—	—	—	—
A6 93	—	—	—	—	—	—	—	—	—	—
A#6 94	—	—	—	—	—	—	—	—	—	—
B6 95	—	—	—	—	—	—	—	—	—	—
C7 96	—	—	—	—	—	—	—	—	—	—
C#7 97	—	—	—	—	—	—	—	—	—	—
D7 98	—	—	—	—	—	—	—	—	—	—
D#7 99	—	—	—	—	—	—	—	—	—	—
E7 100	—	—	—	—	—	—	—	—	—	—
F7 101	—	—	—	—	—	—	—	—	—	—
F#7 102	—	—	—	—	—	—	—	—	—	—
G7 103	—	—	—	—	—	—	—	—	—	—
G#7 104	—	—	—	—	—	—	—	—	—	—
A7 105	—	—	—	—	—	—	—	—	—	—
A#7 106	—	—	—	—	—	—	—	—	—	—
B7 107	—	—	—	—	—	—	—	—	—	—
C8 108	STANDARD KICK 1a	—	—	—	—	—	—	—	—	—
C#8 109	STANDARD KICK 1b	—	—	—	—	—	—	—	—	—
D8 110	STANDARD KICK 1c	—	—	—	—	—	—	—	—	—
D#8 111	STANDARD KICK 1d	—	—	—	—	—	—	—	—	—
E8 112	STANDARD KICK 2a	—	—	—	—	—	—	—	—	—
F8 113	STANDARD KICK 2b	—	—	—	—	—	—	—	—	—
F#8 114	STANDARD KICK 2c	—	—	—	—	—	—	—	—	—
G8 115	STANDARD KICK 2d	—	—	—	—	—	—	—	—	—
G#8 116	STANDARD1 SNARE a	—	—	—	—	—	—	—	—	—
A8 117	STANDARD1 SNARE b	—	—	—	—	—	—	—	—	—
A#8 118	STANDARD1 SNARE c	—	—	—	—	—	—	—	—	—
B8 119	STANDARD1 SNARE d	—	—	—	—	—	—	—	—	—
C9 120	CLOSED HI-HAT a	←	←	←	←	←	←	←	←	←
C#9 121	CLOSED HI-HAT b	←	←	←	←	←	←	←	←	←
D9 122	CLOSED HI-HAT c	←	←	←	←	←	←	←	←	←
D#9 123	CLOSED HI-HAT d	←	←	←	←	←	←	←	←	←
E9 124	PEDAL HI-HAT a	←	←	←	←	←	←	←	←	←
F9 125	PEDAL HI-HAT b	←	←	←	←	←	←	←	←	←
F#9 126	OPEN HI-HAT a	←	←	←	←	←	←	←	←	←
G9 127	OPEN HI-HAT b	←	←	←	←	←	←	←	←	←

Fingered Chord Chart

Cuadro de acordes digitados (Fingered)

Root \ Chord Type	M	m	7	m7	dim7	M7	dim	m7♭5
C								
C♯/(D♭)								
D								
(D♯)/E♭								
E								
F								
F♯/(G♭)								
G								
(G♯)/A♭								
A								
(A♯)/B♭								
B								

Root \ Chord Type	aug	sus4	7sus4	m add9	mM7	7♭5	add9
C							
C♯/(D♭)							
D							
(D♯)/E♭							
E							
F							
F♯/(G♭)							
G							
(G♯)/A♭							
A							
(A♯)/B♭							
B							

Model **PX-310**

MIDI Implementation Chart

Version: 1.0

Function ...		Transmitted	Recognized	Remarks
Basic	**Default**	1-16	1-16	
Channel	**Changed**	1-16	1-16	
Mode	**Default**	Mode 3	Mode 3	
	Messages	X	X	
	Altered	**********	**********	
Note		21-108	0-127	*1: Depends on tone
Number	**True voice**	**********	0-127 *1	*1: Depende del tono.
Velocity	**Note ON**	O 9nH V = 1-127	O 9nH V = 1-127	**: no relation
	Note OFF	X 9nH V = 0	X 9nH V = 0, 8nH V = **	**: sin relación
After	**Key's**	X	X	
Touch	**Ch's**	X	O	
Pitch Bender		X	O	
Control Change	**0,32**	O	O	Bank select
	1	X	O	Modulation
	6,38	O	O	Data entry
	7	X	O	Volume
	10	X	O	Pan
	11	X	O	Expression
	16	X	O	DSP Parameter0
	17	X	O	DSP Parameter1
	18	X	O	DSP Parameter2
	19	X	O	DSP Parameter3
	64	O	O	Damper
	66	O*2	O	Sostenuto
	67	O*2	O	Soft pedal
	71	X	O	Resonance
	72	X	O	Release Time
	73	X	O	Attack Time
	74	X	O	Brightness
	76	X	O	Vibrato rate
	77	X	O	Vibrato depth
	78	X	O	Vibrato delay
	80	X	O	DSP Parameter4
	81	X	O	DSP Parameter5
	82	X	O	DSP Parameter6
	83	X	O	DSP Parameter7
	91	X	O	Reverb send
	93	X	O	Chorus send
	98,99	X	O	NRPN LSB, MSB
	100,101	O	O	RPN LSB, MSB
	120	X	O	All sound off
	121	O	O	Reset all controller
Program Change	**:True #**	O 0-127	O 0-127	
		**********	**********	
System Exclusive		O	O	
System Common	**: Song Pos**	X	X	
	: Song Sel	X	X	
	: Tune	X	X	
System Real Time	**: Clock**	O	X	
	: Commands	O	X	
Aux Messages	**: Local ON/OFF**	X	X	
	: All notes OFF	X	O	
	: Active Sense	X	O	
	: Reset	X	X	
Remarks		*2 In accordance with pedal *2 De acuerdo al pedal.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

This recycle mark indicates that the packaging conforms to the environmental protection legislation in Germany.

Esta marca de reciclaje indica que el empaquetado se ajusta a la legislación de protección ambiental en Alemania.

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